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THE

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

FOR OCTOBER 1858.

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THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

EDITED BY

ISAAC HAYS, M.D.,

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TO READERS AND CORRESPONDENTS.

A number of communications are on hand, which shall receive early attention.

The following works have been received:—

On Malformations, &c., of the Human Heart. With original cases. By Thomas B. Peacock, M. D., F. R. C. P., Ass. Physician to St. Thomas' Hospital, &c. London, 1858. (From the Author.)

Ophthalmic Hospital Reports and Journal of the Royal London Ophthalmic Hospital. Edited by J. F. Streatfeild. April, 1858. (From the Editor.)

Elements of Inorganic Chemistry. Including the Applications of the Science in the Arts. By Thomas Graham, F. R. S. L. & E., late Professor of Chemistry in University College, London. Edited by Henry Watts, B. A., F. C. S., and Robert Bridges, M. D. Second American, from the second revised and enlarged London edition. Complete in one volume. With two hundred and thirty-three illustrations on wood. Philadelphia: Blanchard & Lea, 1858. (From the Publishers.)

The Institutes of Medicine. By Martyn Paine, A. M., M. D., etc. etc. New York, 1858. (From the Author.)

Outlines of a Course of Lectures on the Principles and Practice of Surgery, Delivered by E. Geddings, M. D., Professor of Surgery in the Medical College of the State of South Carolina. Prepared by Thos. S. Waring, M. D., and Sam'l Logan, M. D. Published with the consent, and revised by, Prof. Geddings. Charleston: S. G. Courtenay & Co., 1858.

Clinical Lectures on the Principles and Practice of Medicine. By John Hughes Bennett, M. D., F. R. S. E., Professor of the Institutes of Medicine, &c. &c. &c. Second edition, with 468 illustrations on wood. New York: S. S. & W. Wood, 1858. (From the Publishers.)

Mind and Matter: or, Physiological Inquiries. By Sir Benjamin Brodie, Bart. With additional notes by an American editor. New York: Sam'l S. & Wm. Wood, 1858. (From the Publishers.)

Of Nature and Art in the Cure of Disease. By Sir John Forbes, M. D., &c. &c. From the second London edition. New York: Sam'l S. & Wm. Wood, 1858. (From the Publishers.)

Transactions of the Medical Society of the State of New York for the year 1858. Albany, 1858.

Transactions of the Twelfth Annual Meeting of the Ohio State Medical Society, held in the City of Sandusky, June, 1857. Sandusky, 1857.

Proceedings of the American Pharmaceutical Association at the Sixth Annual Meeting, held in Philadelphia, September, 1857. Philadelphia, 1857.

The Parish Will Case before the Surrogate of the City of New York. Medical Opinions upon the Mental Competency of Mr. Parish. By Drs. Watson, Brown, Ranney, Earle, Bell, Ray, and Sir H. Holland. New York, 1857. (From Dr. Jno. Watson.)

Researches on Primary Pathology and the Origin and Laws of Epidemics. In two volumes. By M. L. Knapp, M. D., Member of the Medical and Chirurgical Faculty of Maryland, etc. etc. Philadelphia: Published by the Author, 1858.

Ventilation in American Dwellings. With a Series of Diagrams presenting Examples in Different Classes of Habitations. By David Boswell Reid, M. D., F. R. S. E., Fellow of the Royal College of Physicians of Edinburgh, etc. etc. etc. To which is added an Introductory Outline of the Progress of Improvement in Ventilation. By Elisha Harris, M. D., late Physician-in-Chief of the New York Quarantine Hospital, etc. etc. New York: Wiley & Halsted, 1858.

Dysentery: Its Pathology and Treatment. Clinical Lectures. By ROBERT CAMPBELL, M. D. Augusta, Geo. (From the Author.)

The Sulphate of Quinia. Lectures delivered in the Regular Course of the Medical Department of the University of Michigan. By A. B. PALMER, M. D., Professor of Materia Medica and Therapeutics and Diseases of Women and Children. Published by the Class. Detroit, 1858. (From the Author.)

Pestilential Diseases and the Laws which Govern their Propagation. A letter from ELISHA HARRIS, M. D., late Physician-in-Chief of the New York Quarantine Hospital, in reply to inquiries addressed by the Quarantine Commissioners. Albany, 1858. (From Dr. Bradford.)

Spinal Caries or Angular Curvature. By BUCKMINSTER BROWN, M.D. (From the Author.)

Cases of Talipes or Club-Foot. By BUCKMINSTER BROWN, M. D. Boston, 1858. (From the Author.)

Tendency of Misdirected Education and the Unbalanced Mind to Produce Insanity. By EDWARD JARVIS, M. D. (From the Author.)

Diseases of the Ear. An Essay on the Present State of Aural Medicine and Surgery. By J. P. COLGAN, M. D. Brooklyn, 1858. (From the Author.)

Essays on the Philosophy of Vitality as Contradistinguished from Chemical and Mechanical Philosophy, and on the Modus Operandi of Remedial Agents. By MARTYN PAINE, A. M., M. D., Professor of the Institutes of Medicine and Materia Medica in the Medical Department of the University of New York, etc. etc. New York, 1842.

Contributions to Operative Surgery and Surgical Pathology. By J. M. CARNOCHAN, Professor of Surgery in the New York Medical College, &c. &c. With illustrations drawn from nature. Philadelphia: Lindsay & Blakiston, 1858.

Pathology and Treatment of the Paralysis of Motion. By J. P. BATCHELDER, M. D. New York.

Case of Diabetes Mellitus treated by JOSEPH JONES, A.M., M.D. (From the Southern Medical and Surgical Journal, Aug. Ga., May, 1858.)

Third Annual Report of the Births, Marriages, and Deaths in the City of Providence for the year ending Dec. 31, 1857. By EDWIN M. SNOW, M. D., City Registrar. Providence, 1858.

Tenth Annual Report of the Massachusetts School for Idiotic and Feeble-Minded Youth. Boston, 1858.

Fifteenth Annual Report of the Managers of the State [New York] Lunatic Asylum. Albany, 1858.

Report of the State Librarian to the General Assembly relating to the Registration of Births, Marriages, and Deaths, for the year ending Dec. 31, 1857. May session, 1858. Hartford, 1858.

Fifth Annual Report to the General Assembly of Kentucky, relating to the Registry and Returns of Births, Marriages, and Deaths in the State of Kentucky, from January 1, to December 31, 1856. Frankfort, 1857.

Report of the Board of Managers of the Pennsylvania Hospital to the Contributors at their Annual Meeting, held Fifth Month 3d, 1858, together with the accounts of the Treasurer and Stewards. Philadelphia, 1858.

Second Annual Report of the Board of Managers of the Children's Hospital of Philadelphia.

Valedictory Address to the Medical Graduates of Harvard University, March 10, 1858. By OLIVER WENDELL HOLMES, M. D.

Valedictory Address to the Class of Medical Graduates of the University of Pennsylvania. Delivered at the Public Commencement, March 27, 1858. By JOSEPH LEIDY, M. D., Professor of Anatomy. Published by the Graduating Class. Philadelphia, 1858.

The following Journals have been received in exchange:—

Le Moniteur des Hôpitaux. Redacteur en Chef, M. H. DE CASTELNAU. March, April, May, June, 1858.

Journal de Médecine de Bordeaux. Redacteur en Chef, M. COSTES. Nov., Dec., 1857. Feb., March, May, 1858.

Journal de la Physiologie de l'homme et des animaux. Publié sous la direction du Docteur E. Brown-Séquard. April, 1858.

Annales Médico-Psychologiques. Par les Docteurs Baillarger, Cerise, et Moreau (de Tours), 1858.

Medical Times and Gazette. April, May, June, 1858.

Edinburgh Medical Journal. March, April, May, 1858.

British Medical Journal. Edited by Andrew Winter, M. D. March, April, May, 1858.

Dublin Hospital Gazette. March, April, 1858.

British and Foreign Medico-Chirurgical Review. April, 1858.

The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D., &c. April, 1858.

The Sanitary Review and Journal of Public Health. Edited by Benj. W. Richardson, M. D. April, 1858.

The Glasgow Medical Journal. April, 1858.

Dublin Medical Press. May, 1858. [This Journal reaches us very irregularly.]

The Dublin Quarterly Journal of Medical Science. May, 1858.

The Indian Annals of Medical Science. January, 1858.

The Medical Chronicle. Edited by Wm. Wright, M. D., and D. C. MacCallum, M. D. April, May, June, 1858.

Virginia Medical Journal. Edited by Drs. McCaw and Otis. April, May, and June, 1858.

The Boston Medical and Surgical Journal. Edited by W. W. Morland, M. D., and Francis Minot, M. D. April, May, June, 1858.

Southern Medical and Surgical Journal. Edited by Henry F. Campbell, M. D., and Robert Campbell, M. D. April, May, June, 1858.

Quarterly Summary of the Transactions of the Philadelphia College of Physicians. Vol. III., No. 4.

The Transactions of the New York Academy of Medicine. Vol. II., Pt. II. New York, 1858.

New Orleans Medical News and Hospital Gazette. Edited by D. W. Brickell, M. D., and E. D. Fenner, M. D. April, May, June, 1858.

Oglethorpe Medical and Surgical Journal. Edited by H. L. Byrd, M. D., and H. Steele, M. D. April, June, 1858.

The American Journal of Insanity. Edited by the Medical Officers of the New York State Lunatic Asylum. April, 1858.

The New Hampshire Journal of Medicine. Edited by Geo. H. Hubbard, M. D. April, 1858.

The Cincinnati Lancet and Observer. Edited by Drs. Geo. Mendenhall, J. A. Murphy, and Ed. B. Stevens. May, June, 1858.

The New York Journal of Medicine. Edited by Stephen Smith, M. D. May, 1858.

The American Journal of Pharmacy. Edited by William Procter, Jr. May, 1858.

St. Louis Medical and Surgical Journal. Edited by M. L. Linton, M. D., and W. M. McPheeters, M. D. March, 1858.

The Dental News Letter. Edited by J. D. White, D. D. S., and J. R. McCurdy, D. D. S. April, 1858.

Nashville Journal of Medicine and Surgery. Edited by W. K. Bowling, M. D. April, May, June, 1858.

The Chicago Medical Journal. Edited by N. S. Davis, M. D., and W. H. Byford, M. D. March, April, 1858.

The Peninsular and Independent Medical Journal. Edited by A. B. Palmer, M. D., Moses Gunn, M. D., and Fred. Stearns. April, May, June, 1858.

Buffalo Medical Journal. Edited by S. B. Hunt, M. D., and Austin Flint, Jr., M. D. April, May, June, 1858.

The American Journal of Dental Science. Edited by Chapin A. Harris, M. D., D. D. S., and A. S. Piggot, M. D. April, 1858.

American Medical Monthly. Edited by Ed. H. Parker, M. D., and J. H. Douglas, M.D., and L. H. Heiner. June, 1858.

Atlanta Medical and Surgical Journal. Edited by Jos. P. Logan, M. D., and W. F. Westmoreland, M. D. April, May, June, 1858.

The Medical and Surgical Reporter. Edited by S. W. Butler, M. D., and W. B. Atkinson. M. D. April, May, June, 1858.

The Pacific Medical and Surgical Journal. Edited by J. B. Trask, M. D., and David Wooster, M. D. March, April, 1858.

Memphis Medical Recorder. Edited by D. F. Wright, M. D. April, 1858.

The New Orleans Medical and Surgical Journal. Edited by Bennet Dowler, M. D. May, 1858.

The Ohio Medical and Surgical Journal. Edited by John Dawson, M. D. May, 1858.

American Druggists' Circular and Chemical Gazette. May, June, 1858.

Charleston Medical Journal and Review. Edited by J. Dickson Bruns, M. D. May, 1858.

The Savannah Journal of Medicine. Edited by Drs. Sullivan, Harris, and Arnold. May, 1858.

The North American Medico-Chirurgical Review. Edited by Drs. Gross and Richardson. May, 1858.

The American Journal of Science and Arts. Edited by Profs. Silliman, B. Silliman, Jr., and J. D. Dana. May, 1858.

The New Hampshire Journal of Medicine. Edited by G. H. Hubbard, M. D. May, June, 1858.

The Maine Medical and Surgical Reporter. Edited by Drs. W. R. Richardson and R. W. Cummings. June, 1858.

The Peninsular and Independent Medical Journal. Edited by Drs. Palmer, Gunn, and Stearns. June, 1858.

Proceedings of the Academy of Natural Sciences of Philadelphia. January, February, March, April, 1858.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to Isaac Hays, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London;* or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

Private communications to the Editor, may be addressed to his residence, 1525 Locust St.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Blanchard & Lea.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

To secure insertion, all advertisements should be received by the 20th of the previous month.

CONTENTS

OF THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

NO. LXXI. NEW SERIES.

JULY, 1858.

ORIGINAL COMMUNICATIONS.

MEMOIRS AND CASES.

ART. PAGE

I. Report of a Case of Inversion of the Uterus Successfully Reduced after Six Months, with Remarks on Reduction in Chronic Inversion. By James P. White, M. D., Professor of Obstetrics in the University of Buffalo, and Accoucheur to the Buffalo Lying-in Hospital. (With four wood-cuts.) - - - - - - - - - - - - - - 13

II. On Natural and Artificial Lactation. By Wm. Henry Cumming, M. D. 25

III. Fatty Degeneration of the Heart—Death from the Inhalation of the Tincture of Chloroform. By William A. Hammond, M. D., Assist. Surg. U. S. Army. (Read before the Biological Department of the Academy of Natural Sciences of Philadelphia, April 19, 1858.) - - - - 41

IV. Case of Extra-Uterine Pregnancy—Fœtus extracted per anum, four years and six weeks after the completion of the Natural Term. By Christopher Johnston, M. D., Surgeon to the Union Protestant Infirmary, Baltimore. - - - - - - - - - - - - - - 44

V. Remarkable Case of Aneurism of the Thoracic Aorta. By John H. Packard, M. D. (With four wood-cuts.) - - - - - - - - 48

VI. Remarks upon the Minute Anatomy of three cases of Cysto-carcinoma, extirpated by Prof. Henry H. Smith, at the Surgical Clinic of the University of Penna. By J. J. Woodward, M. D., of Phila., Assistant to the Surgical Clinic. Read before the Biological Department of the Academy of Natural Sciences of Philadelphia, May 17, 1858. (With wood-cut.) - 54

VII. Contributions to the Pathology of Disease of the Encephalon. By Frederic D. Lente, M. D., Surgeon to the West Point Foundry. - - 59

VIII. Amputation at the Shoulder-Joint of a Gangrenous Arm; the Gangrene having spread to and attacked the Trunk before Amputation. By J. F. Hammond, M. D., Ass. Surg. U. S. A. - - - - - - - - 67

IX. Stricture of the Urethra, Treatment of, by Syme's Operation of Perineal Section. By Wm. S. Halsey, M. D., Professor of Surgery in the Philadelphia College of Medicine. - - - - - - - - - - 72

X. Report of a Case in which Two Ounces of Arsenic were taken into the Stomach without proving fatal. By W. C. Jackson, M. D., of Montgomery, Ala. - - - - - - - - - - - - - - - 77

ART. PAGE
XI. Spontaneous Cure of Artificial Anus after the Operation for Strangulated Femoral Hernia. By D. Leasure, M. D., of New Castle, Penna. - 79

XII. Case of Hæmatocele. By John H. Packard, M. D. - - - - - 81

XIII. Fracture of the Skull, with Protrusion of the Brain, and Subsequent Recovery. By A. W. McDowell, M. D., of Bedminster, Somerset County, New Jersey. - - - - - - - - - - - - - - - 85

XIV. Removal of a large Urethro-Vesical Calculus. By A. Reeves Jackson, M. D., Stroudsburg, Pa. - - - - - - - - - - 87

XV. Exsection of the Lower Four-fifths of the Radius. By J. M. Carnochan, Professor of Surgery in the New York Medical College, Surgeon-in-Chief to the State Hospital (New York), etc. (With a wood-cut.) - 89

TRANSACTIONS OF SOCIETIES.

XVI. Summary of the Transactions of the College of Physicians of Philadelphia. - - - - - - - - - - - - - - - 93
Gangrena Oris. By Dr. Corse. - - - - - - - - 93
Abscess contained in an Aneurismal Sac. By Dr. Wood. - - 94
Narcotism from the Extract of Hyoscyamus. By Dr. Keating - 96
Case of Craniotomy. By Dr. Corse. - - - - - - - 97
Melanosis of the Supra-Renal Capsules. By Dr. Levick. - - 98
Arsenical Poisoning—Arsenic in Subnitrate of Bismuth. By Prof. Rogers. - - - - - - - - - - - - - - 99
Sickbed. By Dr. Addinell Hewson. - - - - - - - 101
Fractures of the Scapula. By Dr. Neill. - - - - - - - 105
Melanosis. By Dr. Henry Bond. - - - - - - - - 106

REVIEWS.

XVII. The Transactions of the American Medical Association, Instituted 1847. Vol. X. 8vo., pp. 676. Philadelphia, 1857. - - - - - 109

XVIII. Outlines of a Course of Lectures on the Principles and Practice of Surgery, delivered by E. Geddings, M. D., Professor of Surgery in the Medical College of the State of South Carolina. Prepared by Thos. S. Waring, M. D., and Samuel Logan, M. D., from notes taking during the course. Published with the consent of, and revised by, Professor Geddings. Charleston: Courtenay & Co., 1858, pp. 560. - - - - 124

XIX. Rational Therapeutics: or the Comparative Value of Different Curative Means, and the Principles of their Application. "Naturâ Duce." By Worthington Hooker, M. D., of New Haven. Prize Essay. 8vo. pp. 70. Boston, 1857. - - - - - - - - - - - - - 129

XX. The Cause of the Coagulation of the Blood; being the Astley Cooper Prize Essay for 1856, with additional Observations and Experiments, and with an Appendix, &c. By Benjamin Ward Richardson, M. D., London, 1858. - - - - - - - - - - - - - - - - 139

XXI. On Malformations, &c., of the Human Heart. With original cases. By Thomas B. Peacock, M. D., Fellow of the Royal College of Physicians, Assistant Physician to St. Thomas's Hospital, and Physician to the Hospital for Diseases of the Chest, Victoria Park. London: John Churchill, New Burlington Street, 1858. 8vo., pp. 143. - - - - - - - 153

BIBLIOGRAPHICAL NOTICES.

ART. PAGE

XXII. The Dispensatory of the United States of America. By George B. Wood, M. D., Professor of Theory and Practice of Medicine in the University of Pennsylvania, &c., and Franklin Bache, M. D., Professor of Chemistry in Jefferson Medical College, &c. Eleventh edition, carefully revised. Philada.: J. B. Lippincott & Co., 1858. 8vo. pp. 1583. - 161

XXIII. The Institutes of Medicine. By Martin Paine, A. M., M. D., LL. D., Professor of the Institutes of Medicine and Materia Medica in the University of the City of New York, etc. etc. 8vo. pp. 1095. Harper and Brother: New York, 1858. - - - - - - - - - - - 163

XXIV. Puerperal Fever; its Causes and Modes of Propagation. Read before the New York Academy of Medicine, at the opening of the Discussion on Puerperal Fever, on the 4th of April, 1857; and published by consent of that body. By Joseph M. Smith, M. D., Professor of Materia Medica and Clinical Medicine in the New York College of Physicians, etc. 8vo. pp. 29. From the New York Journal of Medicine, for September 1, 1857.

Remarks on Puerperal Fever, before the New York Academy of Medicine, October 7, 1857. By B. Fordyce Barker, M. D., Professor of Obstetrics and Diseases of Women and Children, in the New York Medical College, etc. etc. 8vo. pp. 23. From the American Medical Monthly for November, 1857. - - - - - - - - - - - 168

XXV. Reports of American Institutions for the Insane.
1. Of the Eastern Lunatic Asylum of Kentucky, for 1856–57.
2. Of the Tennessee Hospital for the Insane, for 1856–57.
3. Of the State Lunatic Hospital of Pennsylvania, for 1857.
4. Of the Pennsylvania Hospital for the Insane, for 1857.
5. Of the Mount Hope Institution, for 1857.
6. Of the Butler Hospital, for 1857.
7. Of the McLean Asylum, for 1857.
8. Of the Massachusetts State Lunatic Hospital, at Worcester, for 1857.
9. Of the Maine Insane Hospital, for 1857. - - - - - - - 174

XXVI. Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volume the fortieth. London, 1857. 8vo. pp. 288. - - - - - - - - - - - 188

XXVII. A Manual of Obstetrics; Theoretical and Practical. By W. Tyler Smith, M. D., Member of the Royal College of Physicians, Physician-Accoucheur to, and Lecturer on Midwifery at, St. Mary's Hospital. 12mo. pp. 628. London, 1858. - - - - - - - - - - 192

XXVIII. Reports of the Provincial Lunatic Asylum of New Brunswick, for the years 1854, 1855, and 1856. - - - - - - - - - 193

XXIX. Ophthalmic Hospital Reports and Journal of the Royal London Ophthalmic Hospital. Edited by J. F. Streatfeild. Oct., 1857, Jan., 1858. - - - - - - - - - - - - - - 194

QUARTERLY SUMMARY
OF THE
IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

FOREIGN INTELLIGENCE.

Anatomy and Physiology.

PAGE
1. Flow of the Lacteal Fluid in the Mesentery. By Joseph Lister, Esq. - - - - - - 195
2. On Certain Pathological Characters of the Blood Corpuscles. By J. P. Hennessy, Esq. - - 196
3. Congenital Fissure of the Sternum. By Prof. Bennett. - - 197

Materia Medica and Pharmacy.

4. Medicinal Action of Lupuline. By Mr. Walter Jauncey. - - 198
5. Chloroform as a Narcotic. - 201
6. Therapeutical Properties of Larch Bark. By Dr. Moore. - 201
7. New Preparation of Bark—Quinium. By MM. Delondre and A. Labarraque. - - - - - 202
8. Syrup of Protocarbonate of Iron. By M. Dannecy. - - 203
9. Iodide of Lime. By Dr. Pidduck. - -. - - - 204
10. Formula for Compound Sulphur Ointment. - - - 204
11. Formula for the Preparation of Anti-Asthmatic Cigarettes. By M. Dannecy. - - - - - 204
12. Chemistry of Caustics. By Mr. Wm. Bastick. - - - - 205
13. New Caustic Pencil, Modifying the Tissues in Different Degrees. Double Salt of Nitrate of Silver and of Soda. By M. Brun. - 206

Medical Pathology and Therapeutics, and Practical Medicine.

14. Contribution to the Etiology of Continued Fever; or an Investigation of the Various Causes which Influence the Prevalence and Mortality of its Different Forms. By Dr. Murchison. - 207
15. Is Intestinal Hemorrhage Diagnostic of Typhus or Typhoid Fevers? By Dr. Henry Kennedy. - - - - - - 209
16. Yellow Fever Epidemic of 1856, at New Castle, Jamaica. By Dr. Lawson. - - - - - - 209
17. Diagnostical and Prognostical Value of Hæmoptysis. By Prof. Trousseau. - - - - - 210
18. Action of Cod-Liver Oil, and the Substitution of Ordinary Fats in Food. By Dr. Edward Smith. - - - - - - 213
19. Rottlera Tinctoria in Tapeworm. By Dr. Balfour. - - 214
20. On the Absorption of Medicinal Substances by the Large Intestine. By M. Briquet. - - 214
21. Case of Communication with the Stomach through the Abdominal Parietes, produced by Ulceration from External Pressure; with Observations on the Cases of Fistula of the Stomach, already recorded. By C. Murchison, M. D. - - - - - 215
22. Sugar and Diabetes. By Dr. Budd. - - - - - - 217
23. Diphtheria. - - - - - 220
24. Report of the Belgian Academy of Medicine on Vaccination. - 221
25. Supra-Renal Capsules. By Dr. Geo. Harley. - - - - 222
26. Bronzed Skin and Disease of the Supra-renal Capsules. - 223
27. Congenital Absence of the Supra-renal Capsules. By Dr. Martini. - - - - - - 225
28. Disease of the Supra-renal Capsules with Bronzed Skin. By Dr. Adam Martin. - - 225
29. A New Case of Amyloid Degeneration. By Dr. Rud. Virchow. 225

Surgical Pathology and Therapeutics, and Operative Surgery.

PAGE
30. On the Early Stages of Inflammation. By Jos. Lister, Esq. - 226
31. Successful Deligation of the Subclavian Artery for Axillary Aneurism. By Wm. Pirrie. - 229
32. Rupture of External Iliac Artery; Ligature of Common Iliac Artery. By Mr. A. M. Edwards. 231
33. Historical Critique on the Cure of Popliteal Aneurisms by Digital Compression; with reference to several Communications made to the Société de Chirurgie. By Ar. Verneuil. - - - - - 234
34. Popliteal Aneurism cured by Pressure in twenty-six and a half hours. By T. A. Cusack, Esq. - - - - - - - 239
35. Fracture of the Neck of the Femur within the Capsule. By Dr. Bryant. - - - - - 241
36. Resection of the Head of the Femur. By Holmes Coote, M.D. 241
37. Excision of the Knee. By Mr. Humphry. - - - - - 243
38. Treatment of Enlarged Bursæ. By Mr. Wm. Coulson. - - 246
39. Use of the Tincture of Aconite as a Preventive of Rigor after the Introduction of Instruments into the Urethra. By Jas. Long, Esq. 246
40. Lithotritic Instruments in Cases of Enlarged Prostate. By Mr. William Coulson. - 247
41. Extraction of a Fragment of Gutta Percha Bougie from the Urinary Bladder by means of the Lithotrite. By Mr. Holmes Coote. - - - - - - 249
42. Statistics of Tracheotomy in Croup; Indications and Contra-indications of the Operation. By H. Chaillou. - - - - - 251
43. Severe Abdominal Wound; Recovery. By Dr. Corbett. - 253
44. Ovariotomy. By Dr. J. M. Joseph. - - - - - - 254

Ophthalmology.

45. Surgical Treatment of Glaucoma. By Mr. J. W. Hulke. - 254
46. On the Operation of Iridectomy, or Excision of a Piece of the Iris, as recommended by Dr. Graefe, of Berlin, as a Means of Cure in Various Diseases of the Eye, especially Chronic Iritis, Irido-choroiditis, and Glaucoma. By T. Wharton Jones, and William Mackenzie, M.D. - - 257
47. Excision of Portion of the Iris for Glaucoma. By Dr. Bader. - 262
48. Evacuation of the Aqueous Humour in Eye Disease. By Prof. Wm. Martin. - - - 262
49. Strumous Ophthalmia. By Henley Thorp. - - - - 263
50. Division Posteriorly of Cataract in Situ. By Prof. Martin. - 264

Midwifery.

51. Menstruation During Pregnancy. By Dr. Elsasser. - 266
52. Premature Discharge of Liquor Amnii. By Dr. T. H. Babington. - - - - - - - 266
53. Watery Discharge from the Uterus During Pregnancy. By Dr. Harvey. - - - - - 267
54. On the Action of Galvanism upon the Contractile Structure of the Gravid Uterus, and its Remedial Powers in Obstetric Practice. By Dr. F. W. Mackenzie. 268
55. Influence of Pregnancy and Delivery on Insanity. By M. Marcé. - - - - - - 269
56. Curative Effects of Pregnancy on Prolopsus Uteri. By M. Brachet. - - - - - - 270
57. Unconscious Delivery. By Geo. Smith, M.D. - - - - 270
58. Complete Inversion of the Uterus of Nearly Twelve Years' Duration, Successfully Treated. By Dr. Tyler Smith. - - - 270
59. Rare Case of Fracture of the Sternum during Labour, with Observations. By Drs. F. Lucchetti and G. Posta. - - - 272
60. Ruptured Uterus Treated by the Free Exhibition of Opium. By Dr. Harvey. - - - 274
61. Puerperal Fever. By M. Cazeaux. - - - - - - 277

Medical Jurisprudence and Toxicology.

PAGE
62. The Condition of the Lung not Invariably to be Depended on as a Proof that the Infant has been Born Alive. By Thos. Williamson, M. D. - - - - - - 280
63. Death from Chloroform. By Augustin Prichard, Esq. - - 281

AMERICAN INTELLIGENCE.

Original Communications.

The Local Application of Belladonna as a Means of Arresting the Secretion of Milk. By Mr. Geo. McC. Miller, M. D. - - 283
Ranula Successfully Treated by a Lead Ligature. By John J. Peele, M. D. - - - - 283
Case of Poisoning by Camphor. By T. M. Woodson, M. D. - 284
Death from a Gallstone arrested at the Lower Part of the Small Intestine. By D. Leasure, M. D - - - - - - 285

S t

Domestic Summary.

Reduction of Dislocations of the Femur by Manipulation. By Dr. F. Hamilton. - - - - 286
Empyema of the Left Pleural Cavity Treated by Injection of Iodine. By Prof. Daniel Brainard. - - - - - - - 289
Constitutional Effects Produced by Substances Introduced into the Urethra. By Dr. J. L. Crawcour. 290
Piece of Tin in the Wind-Pipe. Laryngo-Tracheotomy. By Dr. Paul F. Eve. - - - - - 290
Impregnation without Rupture of Hymen; Great Sensibility of Parts. By Dr. Howard Smith. 290
Cystic Tumours on the Nates, obstructing Delivery. By Dr. Keller. - - - - - - 291

THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR JULY 1858.

ART. I.—*Report of a Case of Inversion of the Uterus Successfully Reduced after Six Months, with Remarks on Reduction in Chronic Inversion.* By JAMES P. WHITE, M. D., Professor of Obstetrics in the University of Buffalo, and Accoucheur to the Buffalo Lying-in Hospital. (With four wood cuts.)

THE following report of a case of inverted uterus was made at a meeting of the Buffalo Medical Association, February 12th, 1856, and appears in its published proceedings:—

On Monday, 28th January, Dr. Storck called at my office requesting my attendance, with himself and Dr. Dupré, upon a young female at No. 9 Huron Street, who had been delivered of her first child upon the Tuesday previous.

Accompanying him, I found the patient, 19 years old, exsanguine, with quick pulse, and greatly exhausted from loss of blood. I found that she had been attended, at the time of her delivery, by a German midwife, who stated that, after a brief labour, she had given birth to a male infant, weighing ten and one-half pounds. She also stated that the after-birth soon came away, accompanied by a large tumour, which descended into the vagina. This tumour she supposed to be a mole or false conception, and she stated that it was as "large as a cannon-ball." The flooding, at the time, she described as terrific, producing protracted syncope.

A day or two previous to my first visit, whilst making an effort to evacuate the bowels, the tumour had descended through the os externum and became suspended between the patient's thighs. All her efforts to remove the tumour proving unavailing, the midwife had sent for the gentlemen above mentioned for that purpose, and they now associated me with them in the treatment of the case.

The tumour was immediately recognized as the inverted uterus, as large as at the fourth month of pregnancy, which, with the external organs, was inflamed and tender. The uterus felt hard and inflexible, the body being apparently distended with blood from the ligated condition of the neck, and the parts had been rendered exceedingly irritable by manipulations for the removal of the supposed "false conception or tumour."

By grasping the uterus gently and firmly with both hands, which it completely filled, compression was continued until the organ was relieved of its engorgement and considerably diminished in bulk. By continuing this firm but gentle compression, I was at length enabled to carry it up into the vagina. At this time the patient, having lost some blood during the effort, became very faint, in consequence of which, and the sensitiveness of the vulva, it was deemed prudent to omit further efforts at restoration of the organ until the following morning.

Meanwhile the bowels were moved by an enema, followed by an anodyne, and fomentations were applied to the abdomen and external genitals. The patient was also directed to take freely of broths and stimulants.

Tuesday, 29*th*, 12 M.—Slept pretty well during the night; the hypogastric and vulval soreness is considerably diminished; the uterus lessened in size, and manifests some susceptibility to indentation upon pressure. The hemorrhage has continued during the night; pulse 144, and feeble; has had a severe chill, and is greatly prostrated. During the last three hours Dr. Storck has, at my suggestion, applied extract of belladonna to the neck of the uterus. At 12 o'clock placed the woman across the bed, her pelvis resting upon its edge and her feet being supported, one in the lap of Dr. Dupré, the other in that of Dr. Storck. Prof. S. B. Hunt, who was kind enough to visit her, upon my invitation, gave her chloroform so as gradually to bring her moderately under its influence. This effect was maintained throughout the succeeding operation.

I now placed myself upon my knees between the limbs of the patient, a position admitting of free motion on my own part, giving complete control of the pelvis of the woman, and which could be maintained for a considerable period without unnecessary fatigue to the operator. Introducing the entire right hand into the vagina, the whole body and fundus of the organ were firmly and continuously compressed for some time. At length, keeping up the pressure, it was found, upon applying the thumb to the fundus, that a slight depression could be made. Having succeeded in dimpling the fundus, pressure was maintained with the thumb at that point until the hand became so fatigued as to be nearly powerless. To preserve this depression whilst the muscles of the hand were permitted to relax, a rectum bougie, about twelve inches in length and one in diameter, was carried along its palm fixed in the dimple, and pressure unintermittingly continued through it by the left hand outside the vulva. So soon as the intra-vaginal hand was sufficiently rested, pressure by it was recommenced and the bougie withdrawn.

Whenever these progressive efforts were resumed, the left hand was placed over the uterine tumour, which could now be distinctly felt in the hypogastrium. By means of the counter pressure above the pubis, a much greater degree of pressure could be made upon the depression in the fundus of the uterus without lacerating its vaginal connections. At length the fingers of the left hand being pressed well down into the abdomen, seemed to fasten upon or hook over the anterior uterine lip and aid in its reflexion over the organ. Thus securely held between the two hands, one within the vagina and the other upon the hypogastrium, these efforts at reduction were continued until I became nearly exhausted from fatigue. Gradually the concavity of the fundus was found to be deeper and deeper until it finally became completely restored. The bougie was now passed up to the fundus, penetrating twelve or more inches beyond the vulva, and gently maintained there by Prof. Hunt, whilst the patient was replaced in bed. My fingers were benumbed and nearly deprived of sensation by the long-continued unremitting pressure, and at my request he also examined to ascertain whether the organs now occupied their normal relations. This being determined by him affirmatively, the bougie was gently withdrawn and the patient left with directions that an anodyne be administered, quietude preserved, and stimulants and nourishment given freely. It may be added that she seemed more comfortable than before the operation, and expressed herself as feeling better than since her confinement. The hemorrhage was, from this moment, completely arrested.

On the 30th, at 11 A. M., upon visiting her, with the same medical gentlemen who were present the day before, found her feeling better, with less pain and much more hopeful. The pulse had, however, but slightly diminished in frequency (140) or increased in force, and she still looked exsanguine.

Continued the treatment of the day previous, giving as much beef essence and brandy as the stomach will retain.

On Thursday, 31st, at 11 A. M., Dr. Storck informs me that the irritability of the stomach, which had been troublesome from her delivery, was now greatly increased, and it was with difficulty that she retained the smallest quantity of fluid. The pulse is more feeble, and she is evidently sinking. Notwithstanding the free use of quinine and brandy, she expired at 5 P. M. on the same evening.

Feb. 1st, at 12 M., the *post-mortem* was made by Dr. Lemon, in the presence of Drs. Storck, Dupré, Hauenstein, and Prof. Hunt, the last of whom, at my request, furnishes the following report of the condition of parts as they were found upon examination:—

"The examination was held eighteen hours after death. Only the abdominal cavity was opened. All the tissues were extremely bloodless. The stomach and intestines were fully inflated with gas, but almost without any liquid contents. The walls of the intestines were white and translucent, and no trace of inflammatory injection could be found either upon them or any portion of the peritoneum. There was, however, a little serous effusion within the peritoneum, and between some of the convolutions of the intestines a very little lymph was exuded. The uterus was drawn up and removed with as much of the vaginal canal as could be reached from within. Externally the uterus presented its normal shape and position, there being no trace of its recent inversion. The vaginal mucous membrane and the os uteri presented the dark colour usual to the organ at this period after labour. The tissues were not softened, nor was there any laceration of them at any point. Upon section through the posterior wall, the same pale, bloodless appearance, noticed elsewhere, was presented. The uterine cavity contained a little altered blood. Upon washing the surface it presented no unusual appearance. The situation of the placenta was marked by the usual rough, flocculent surface.

"The examination revealed no cause of death, unless the anæmic condition of the tissues may be considered as such. I have never before seen so bloodless a subject, with one exception; that of a girl who died from purpura hæmorrhagica."

The uterus and its appendages were then submitted to the association for inspection.

This case is regarded as interesting in many respects. It will encourage the growing belief among accoucheurs that reduction may be undertaken with reasonable hope of success, at a period much later than most writers have heretofore advised. Denman, Dewees, Velpeau, and others believe any effort at restoration useless after a very few hours. In a valuable paper upon this subject from the editor of the *Buffalo Medical Journal*, to be found in the November number, 1853, sixty-seven cases are collected, and all the facts pertaining to their reduction, so far as they could be obtained, are given. Most of the cases which were successfully treated were operated upon very soon after the accident. Thirty-two of the sixty-seven were not reduced, and a few "exceptional cases" at various periods after the first day. By this table Dr. Hunt has shown that treatment has, though very rarely, resulted in success at a later period than was formerly supposed practicable, and the above case furnishes another instance in support of the same position.

I have witnessed but three cases of inversion of the uterus. The history of one is given above. One of the others was seen and reduced soon after the accident; whilst the third was not visited until the fifteenth day—no effort at reduction being attempted. With my present views upon this subject I should abandon such a case as hopeless only after a prolonged effort at reposition. The accident occurred in 1842, and the female, then but 19 years old, now enjoys tolerable health, though the uterus still remains inverted in the vagina. The case is referred to, and the course of treatment pursued given in part by Prof. Hunt at page 335, in the paper already cited.

The position in which the patient was, in the present instance, placed for the operation is deemed worthy of note. It will be perceived that it gives complete control of the pelvis, permits free motion of the person and arms of the operator, and may be maintained for a long time without fatigue. In this position he is able to render important assistance in the most difficult stage of the operation, with the left hand over the hypogastrium. Nor was the use of the bougie unessential; by its assistance continuous pressure was maintained, whilst the hand was relieved for a short period, thus, as it were, tiring out the circular fibres of the neck. How much of the success of the operation was due to the relaxation of the neck from the application of the belladonna, if, indeed, any beneficial influence was exerted by it, I cannot determine. The moderate anæsthesia, continued during the efforts of manipulation, doubtless saved the patient much pain and lessened involuntary resistance. Whether the patient's chances of rallying were improved by the reposition, may, by some, be deemed doubtful. There were no lesions of the utero-vaginal connection found, indicating that such a degree of force had been used as to impair the integrity of, or excite inflammation in those tissues. The hemorrhage, which had been considerable during the previous twenty-four hours, ceased with reduction, and the woman was much more comfortable the day following than the one preceding. The patient doubtless died from loss of blood immediately attending the delivery of the placenta and inversion of the uterus, the disturbance of the system occasioned by the unnatural position of that organ during eight days, and the continuous drain by hemorrhage during the same period. I believe it to be the opinion of all present that the shock of the operation was fully compensated for by the increased comfort of the patient and arrest of flooding. She had, however, lost too large an amount of blood, reaction could not be established, though nature was aided in her efforts by all the resources of art.

Fully convinced, from the result of the efforts made in this instance eight days after inversion, of the feasibility of restoring the uterus in many cases heretofore considered irreducible, I did not meet with any opportunity of putting my convictions again to the test until the month of March last.

The infrequency of the occurrence of this accident among careful practitioners is apparent from the fact, that many largely engaged in practice pass their whole lives without meeting with a single instance. On this point we may cite the reliable statement of Dr. West, in his work on the *Diseases of Women*, that "in the annals of the Dublin Lying-in Hospital, and those of the London Maternity Charity, it was not once met with in a total of more than 140,000 labours."

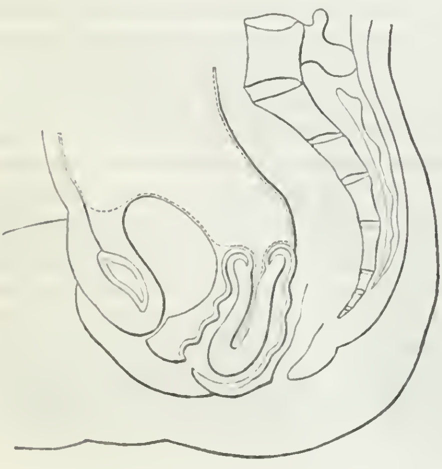
On the third of March, Dr. C. D. Robinson, of Hornellsville, wrote to me, stating that he "had been called in consultation with a neighbouring physician, and found a patient with an inverted uterus of more than five months' standing." My opinion was desired as to "the possibility of returning the inverted organ and the propriety of extirpation." In my reply the impropriety of removal, unless as a last resort, was insisted on, and the hope expressed that a prolonged and well directed effort might succeed in reduction; and that, in my belief, it was due to the poor woman that the attempt should be made before she was abandoned to the evils of chronic inversion. A few days subsequent to this date I was requested to visit her at my earliest convenience.

Engagements in the city prevented my complying with this request until the twelfth of March. On accompanying Dr. Robinson to the residence of the patient, Mrs. Amelia Miller, I found her extremely anæmic, confined to her bed, and suffering greatly from the loss of blood.

The history of the case, as furnished by herself, her husband, and the medical gentlemen who had been in attendance, is as follows: At the age of 30 she was taken in labour at the maturity of her second pregnancy, on the 22d day of September last, Dr. Batten in attendance. This labour was natural to the conclusion of the second stage, when she gave birth to a large male child. Placenta adherent, but removed at the expiration of about thirty minutes, and its delivery followed by copious flowing, severe pain, and faintings. The prostration was so great as to require the constant use of stimulants during the succeeding 48 hours, and for three weeks she continued extremely weak and faint. At about this time she took an aloetic cathartic, which occasioned violent efforts at stool, accompanied by pains resembling those of labour. Profuse hemorrhage followed these straining efforts, and a large pear-shaped tumour made its appearance through the os externum. The neck or smaller extremity of this body was at the vulva, and the larger extremity down between her thighs. By the assistance of her husband, she was enabled to return this tumour within the vulva, when a messenger was dispatched for Dr. Batten. Dr. B., upon his arrival, introduced his hand into the vagina and carried the uterus high up into the pelvis, and resorted to astringents and cold for the purpose of arresting the flow of blood, which continued profuse and difficult to control. The prostration being at this time very great, the horizontal posture was enjoined, stimulants and tonics given, and the bowels moved by enema.

During the succeeding three months she had occasional hemorrhages, which were severe, with constant discharge of muco-sanguinolent matter. Two or three times during this period she so far improved as to walk about her room and partially supervise her domestic affairs, though looking very pale and being very feeble. About the middle of January she had another severe attack of hemorrhage, the tumour again presented externally, and was again returned as before; that is, pushed back within the vulva. Dr. B. again visited her, and prescribed such remedies as seemed necessary to control the flowing. Since about the first of February she has been compelled, from the debility consequent upon the exhausting sanguinolent and leucorrhœal discharges, to preserve the recumbent posture. Lactation, doubtless, added to the exhaustion, and being confined to her bed she had little appetite, the stomach was irritable and the bowels costive. Ever since the patient took the aloetic cathartic and the tumour made its first appearance between the thighs, she has been aware of the existence of something unnatural in the vagina. This body has occasionally made its appearance externally, requiring the assistance of her husband to replace it, and she has had frequent attacks of a "straining sensation" described as accompanying its first complete descent. She has suffered greatly from all the symptoms arising from exhaustion and sympathy with the uterine irritation necessarily developed by its malposition. The pulse now numbers 130; she is blanched or wax-coloured, and grows dizzy and faint when raised to the semi-recumbent posture, and cannot be moved without producing a sense of prostration. It should have been stated that on the 25th February Dr. Robinson, of Hornellsville, and Dr. Reynale, of Downsville, visited the patient in consultation with Dr. Batten, when inversion of the uterus was diagnosed, and measures were resorted to calculated to ameliorate her condition.

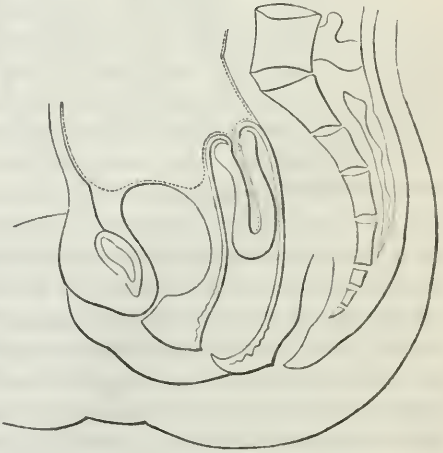
Fig. 1.



Upon making a careful examination (nearly twenty-five weeks having now elapsed since confinement), the fundus of the uterus is found just within the os externum, and about one inch and three-fourths in its transverse diameter, and scarcely exceeding an inch in its antero-posterior diameter, Fig. 1. The body and neck of the organ occupy the vagina, and the neck is not more than one inch in diameter, and feeling like the pedicle of a polypus. The inversion is recognized as complete, and the organ scarcely, if at all, larger than when in its natural position six months after delivery. Introducing a large cylindrical speculum into the vagina, the fundus of the uterus passes readily into its cavity, thus demonstrating the complete involution of the uterus, and bringing distinctly into view the rough mucous membrane of its now outer covering, which bleeds upon the slightest touch with the finger or sound. It is seen to be covered with muco-purulent matter also, and not susceptible of indentation by pressure with the point of the sound.

The bowels having been freely moved by an enema, I proceeded to the operation of reduction in the presence of Drs. Robinson, Reynale, Batten, Dimick, and Mr. J. W. Robinson, medical student. The patient was placed for the operation, as before, upon an elevated, firm bed, with the hips brought quite to its edge, the knees separated, the feet resting in the laps of Drs. Reynale and Robinson, with directions to each to support a knee and hand of the patient, and prevent her from moving about. Dr. Batten brought the patient moderately under the influence of chloroform, which was continued throughout the operation, whilst I placed myself upon my knees, between the limbs of the patient, her pelvis being at a convenient elevation for manipulation. I introduced my right hand completely into the vagina, and firmly grasped the entire body and neck of the uterus. It may here be remarked that the parts were so firmly contracted as to render the introduction of the hand difficult. At the same time that the entire uterine tumour was grasped by the right hand, the large rectum bougie described in the first operation was carried up, and also received into its palm, and held firmly in contact with the fundus of the uterus, the hand being sufficiently large to receive both, and keep them in apposition. Continuous, gentle pressure was now made upon the external extremity of the bougie with the left hand, whilst the right compressed the uterine tumour, and kept the upper extremity of the instrument directly upon the fundus, and with the dorsum of the hand in the concavity of the sacrum, directed the force in the axis of the pelvic cavity, putting the vagina completely upon the stretch, Fig. 2. This pressure was exerted, and this position unintermittingly maintained, although the force was not to such a degree as to endanger laceration of the

Fig. 2.



utero-vaginal connection, until my strength was nearly exhausted from continuity of effort. At length, and when about to relinquish the task, the uterine tumour began to shorten *at its neck*, and the mouth of the organ to push upon the upper surface of the hand. No depression or dimpling of the fundus was at any time perceptible. Ascending more and more rapidly as the neck diminished in length, Fig. 3, the fundus finally passed out of the hand, and was easily pushed by the bougie through the mouth and neck of the organ up to its proper position, Fig. 4.

Fig. 3.

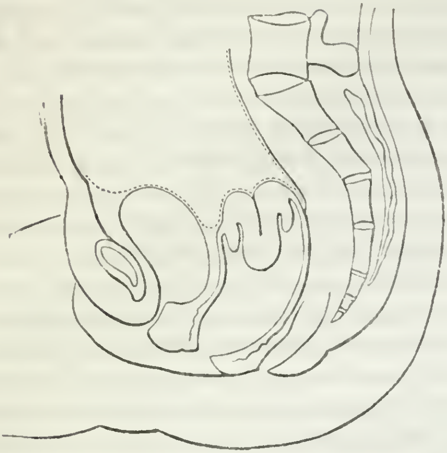
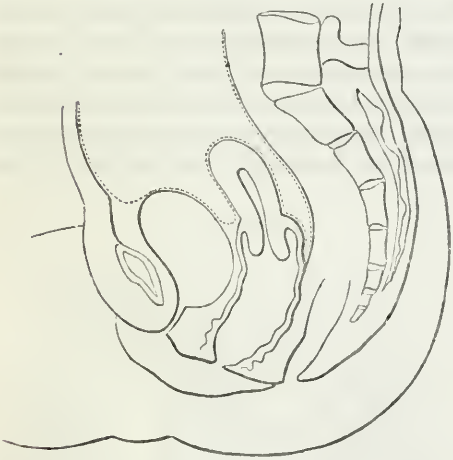


Fig. 4.



In order to verify the restoration, Simpson's sound was introduced alongside of the bougie, and was found to enter a little more than two and one-half inches above the os, which could now be distinctly felt. The large speculum, already referred to, was now slipped up around the bougie, when the os was brought distinctly into view, surrounding also the bougie. The sound was again carried through the os to the fundus, through the speculum, and all the medical gentlemen present saw that it passed easily beyond the mouth to the shoulder of the sound, and could not, without force, be carried further. Thus was demonstrated not only the reduction of the uterus, but that the organ was accurately measured, and found scarcely, if at all, enlarged. The speculum and sound were now withdrawn, the patient carefully removed to the bed, and the bougie retained in place by the hand, to prevent reinversion. Meanwhile, stimulants were given to sustain the patient, and ergot in such doses as were deemed likely to excite the tonic contraction of the uterus. The patient soon recovered from the effects of the chloroform, and expressed herself as feeling quite as comfortable as before the operation. The patient suffered but little during the operation. The discharge of blood was slight, and when the effects of the chloroform had passed off, and she had taken a little brandy and water, she expressed herself as feeling comfortable. Pulse not sensibly changed in quality, and numbering the same as before the operation.

Drs. Robinson and Batten remained with the patient during the succeeding night, alternately maintaining the bougie in the uterus, supporting it gently, and rendering such other attention as the patient required. Continuing the pressure upon the fundus of the uterus was perhaps unnecessary, but it was thought safe not to withdraw the bougie until the next day.

March 13, Dr. Robinson writes: "The patient is quite comfortable; pulse 108. Free from pain. Withdrew the bougie this morning, and found the os uteri embracing it pretty firmly."

Tonics with nutritious diet were continued, and quietude in the horizontal position enjoined.

On the 15th, he writes: "The patient is quite comfortable this morning. Made a digital examination, and found the uterus perfectly *in situ*, and mouth well contracted. Has some appetite. Pulse 100."

March 23, he again writes: "She is improving; has been much annoyed by neuralgia and sickness of stomach, but both are giving way, as is the leucorrhœal discharge. The treatment has been sustaining (porter, wine, quinine, iron, &c.), with nutritious diet." In conclusion, Dr. R. adds: "She will get well, and I feel gratified in the success of the effort of restoration, not only on account of the patient being relieved of a loathsome malady, but also that I have been instrumental in contributing to the professional reputation of one for whom I feel a deep friendship, as your success in this case will relieve obstetrical surgery from the opprobrium which has hitherto been attached to it in cases of chronic inversion of the uterus."

In reply to a letter of inquiry from me, Dr. Robinson writes, April 22:—

"I visited her yesterday and found her very cheerful and able to sit at the table and take tea with us. Her final recovery is now beyond all doubt. In short, the operation has been as successful as its most sanguine friends could desire. Her convalescence has been protracted; slow, perhaps, but when we take into account the great prostration from the long continuance of the malady, and the exhausting hemorrhages and leucorrhœal discharges to which she had been subjected, the only wonder is that she recovers at all."

I am aware that the history of this case may, to many, seem to be unnecessarily minute; but I have desired, at the risk of being thought tedious, to establish, so far as one case can do, the practicability of the operation of reposition at so late a period after inversion. In order to show the importance of having every step in the procedure as well as its result, and the condition of the organs, when it was undertaken, fully proved, it may be well to cite the language of Dr. Meigs, who doubtless speaks the sentiment of the profession upon the subject, relative to a case of similar duration.[1]

"It was inverted at the time of her confinement, six months ago. Mrs. Lucina inverted it by pulling at the cord before the placenta was detached, and either did, or did not know what she had done. The hemorrhage was terrible. The woman ceased to bleed, and did not die, because she fainted so badly, that the vascular injection by the heart was too feeble to kill her by hemorrhage. She slowly recovered in a measure, but bleeds still upon the smallest excess of exercise or labour.

"Well, now, my young friend, you have made your diagnostic. What are you to do for your patient? Will you reposit or reinstate this womb? You can't. You might as well try to invert one of the non-gravid uteri on my lecture-room table as to reposit this one. The time is gone by. You have no art or skill nor no power equal to the performance of such a miracle of surgery as that."

It may, perhaps, be contended that in the instance of Mrs. Miller the inversion was incomplete until the administration of the aloetic cathartic, when the "pear-shaped tumour first appeared between her thighs accompanied with pains like those of labour and terrible hemorrhage." This may be true, although the flowing after the delivery of the placenta was so great as to produce "faintings which continued for two days, requiring the constant use of stimulants," showing that incomplete inversion was probably present. Grant, then, that this incomplete inversion existed from the 22d September, the day of delivery, until the 10th of October, eighteen days after, when she took the purge, and when, by her efforts at stool, the inversion was completed. Concede that the os remained dilated, and that the body and neck did not during that period undergo any diminution in size, there is yet more than five calendar months remaining between the 10th of October and the 12th of March—ample time for the complete involution of the uterus before she came under my care. Besides, the measurements of the uterus, accurately taken before and after reduction, show that it was not larger than the standard dimensions of this organ in the multipara, when diminished to its smallest size in the child-bearing period.

Dr. West, in his recent treatise on uterine disease, says that, "unless checked by inflammation, the process of involution, by which the womb is restored to the size and condition which it presented before pregnancy, is *complete in a few weeks.*" Nearly all authorities now, I suspect, agree that, when not interrupted by disease, it does not require more than three months completely to effect this change. Here, then, we have the uterus nearly six months after delivery, and more than five after all doubt of the existence of complete inversion, presenting all the appearances upon careful examination of having undergone complete involution, yielding to the long-continued manipulations, and completely restored by a single effort.

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[1] Letters to his Class, by Charles D. Meigs, M. D., pages 231 and 232.

We are all aware that the os and neck of the uterus may, by sponge tents and other mechanical contrivances, be widely dilated when the womb is in its natural position and of ordinary size. This dilatation is frequently made by those who are extensively engaged in the treatment of uterine affections for the purpose of perfecting diagnosis or instituting treatment. Of the susceptibility of these parts to be thus dilated, and that, too, without much risk of injury to the tissues involved, or the general health, no one at all familiar with the subject will deny. What is the relation of parts in inversio uteri? Is not the vaginal sheath, which in the normal arrangement of parts was attached to the outside of the neck of the uterus, now, in the inverted state, firmly attached *within* the cavity of the canal of the neck of the uterus just at its orifice? The vaginal canal is securely attached at its lower extremity at or near the outlet of the pelvis, and whilst it is very elastic, is less yielding in its longitudinal than transverse diameter, and not easily lacerated or detached from its connections, unless irregularly pressed as by a pointed instrument. Force or pressure applied to the fundus of the inverted uterus, is resisted by the upper extremity of the vagina, which is now fastened upon the inside of the neck. The lower extremity of the vagina being firmly attached, cannot yield, and the inevitable result must be the pulling open the mouth of the uterus, unless the tissues are lacerated before that part dilates. Can there be any greater difficulty or danger in *pulling* open this outlet than in *pressing* it open if performed with the same gentleness?

The uterus and vagina in complete inversion represent a continuous bag or sac, doubled or reflected upon itself, with the open extremity of the sac securely fixed. Pressure upon the closed end of the bag will, it is plainly perceived, under such circumstances, result in straightening the bag by completely turning it the other side out. So with the parts concerned in inversion. Pressure upon the fundus, if well directed, pulls open, first its mouth, then its neck, and finally, if persevered in, doubles the body upon itself also, and carries the fundus through the os and neck and body to its normal position.

Does any uterine pathologist believe it would be impossible safely to dilate the os and bring down the fundus of the uterus—completely inverting the organ—if carefully and perseveringly undertaken? If affirmatively answered, then why may we not pull open the neck by means of the vagina in the same gentle manner as we would press it open when in a normal position, and thus carry the fundus up through it by means of pressure upon that part when it is in a downward direction? Perhaps I may be too sanguine, but I am inclined to believe that well directed pressure upon the fundus, if continued long enough, will in all cases, where there are no adhesions, result in restoration or reposition, no matter how much time may have elapsed since inversion occurred.

The case of Mrs. M. may indeed be said to establish this point so far as it can be established by a single instance. I am familiar with a case of chronic inversion which occurred sixteen years since, and is described in the article on inversion by Dr. Hunt, already referred to in this paper, and the most careful examination does not enable me to detect any obstacles to its reduction more formidable than had to be overcome in the instance just related. Her general health and her ability to withstand the shock of an operation are greatly superior to the condition of Mrs. Miller. Indeed, I do not despair of inducing this patient to consent to a trial for reduction, which I should undertake with far greater confidence of success than I did the one described above.

When the tissues will not yield to a single effort, some apparatus can easily be adjusted to the fundus of the uterus and retained there, keeping up pressure for several hours or days if necessary. In anticipation of failure to reduce the uterus by a single manipulation, I had provided myself with instruments with which pressure could be continued for a long period without removal from the vagina. Success in the treatment of chronic inversion would be less sanguinely predicted were not the result in this case a mere confirmation of previous opinions formed after much reflection upon the subject. It will be recollected that at the time the inversion of eight days was reduced, the hope was expressed that success would attend the effort of restoration in many cases at a period much later than most writers have heretofore advised the effort to be made.

In relation to the manner in which reduction was effected, it may be well to say one word. There can be no doubt that the os first commenced to yield and pressed down upon the intra-vaginal hand, which, it will be recollected, inclosed the entire uterus and the upper extremity of the bougie and kept them in contact. This part gradually dilated and passed down upon and over the neck, which in turn dilated and doubled down upon itself. The fundus did not perceptibly dimple, or was not reflected upon itself during the operation. The organ was too firm and the cavity too small for any depression to be made upon the walls of the fundus. In recent cases, on the contrary, judging from the one restored within an hour after delivery, and even in that of eight days' standing, it seems to be returned by doubling in or dimpling the fundus, and using it as a wedge to dilate the neck and os. In recent cases much assistance may be rendered by opposing the upper extremity of the uterine tumour with the left hand placed over the hypogastrium. In the chronic case, although the patient was greatly emaciated, the upper extremity of the uterus was too small and obscure to permit counter support to be made available in the operation.

That the administration of chloroform lessens the shock to the nervous system occasioned by the operation, seems highly probable; but it is by no means certain that it renders the reduction any more easily accomplished. Nor am I able to arrive at any satisfactory conclusion relative to the influence exerted by the local application of belladonna.

Buffalo, *April* 25, 1858.

Art. II.—*On Natural and Artificial Lactation.*

By Wm. Henry Cumming, M. D.

Food is necessary to the growth and development of plants and animals. Generation, then, is not merely the quickening of a germ; it requires for its success, a supply of material to be appropriated by the germ, in building up its proper organization. In most animals, the yolk furnishes a limited amount of nourishment, usually exhausted before the young animal has reached that stage of development at which he can use the ordinary food of his race. This deficiency of the yolk-food is supplied in various ways in the various classes of animals.

Insects furnish to their young very little yolk-food. The larva is very far from the perfect development of his kind; but, having a powerful digestive apparatus, and finding food near, he eats, and thus obtains materials for further growth. Having done this, he becomes a pupa, re-entering thus the embryotic state, and there completing his development, comes forth the perfect insect.

We have said that he finds food near. This may occur in different ways. The silk-moth lays her eggs upon the mulberry-tree; the larva feeds upon its leaves. He eats enormously, sheds his skin several times, attains at length his full growth, spins his cocoon, and then in the stillness of apparent death, carries on those further changes, for which ample materials have been secured during the larva state.

The bee, on the other hand, lays up in cells an abundant provision for the larva, by which he is carried through his later transformations.

Many insects deposit their eggs in the water. The larva there finds himself surrounded by smaller organisms, which he devours. The larva of the musquito is an example of this mode of nutrition. Having passed through the necessary changes, he leaves the water, spreads his wings, and thenceforth lives by sucking the juices of plants and animals.

In the frog, the yolk-food is very small, and the tadpole, a little fish-like animal, swimming by means of fins, breathing by means of branchiæ, is very unlike the air-breathing, four-legged, leaping, insect-catching parents. He is in truth a reptilian larva; he eats largely, and grows rapidly; without becoming torpid and inactive, he undergoes great changes of structure, fitting him for his future mode of life.

Many birds leave the egg in a very helpless state: unable to walk or fly, they are dependent, for a longer or shorter period, on parental care. The parents supply them with worms, grubs, insects, &c. Some birds feed their young by vomiting into their open mouths half-digested food.

The gallinaceous birds here deserve especial notice. Many of them leave the egg in a state of entire independence of the mother for food. The yolk-food has in these cases sufficed for the entire development of the bird to this advanced stage.

The eggs of insects are deposited in various localities; some left on trees, some buried in the earth, some dropped in the water, some carefully deposited in cells. There is one other mode which must now be mentioned. The bot-fly deposits her eggs upon the legs of horses, so that they may be licked off, and thus carried into the stomach; there, under the influence of heat and moisture, they are quickly hatched, and the larva being provided with hooks, fixes himself firmly to the walls of the stomach, in which situation he lives by endosmosis. Having thus accumulated a sufficient amount of material for further development, he lets go, and is carried along with the refuse food, and discharged from the body of the animal, to undergo his further transformations in a different locality.

Now, in the case of this insect, there is a striking analogy with the second stage of mammalian development; the egg leaves the ovary, but instead of being laid upon the earth, or in the water, a warm place is provided for it in the midst of a highly vascular organ. Its yolk-food is soon exhausted, but not before another mode of supply has been found. It has no hooks, with which to fasten itself to the walls of its new abode, but it is upheld by the decidua, until other arrangements are made. The villous prolongations of the chorion increase its absorbing surface; and here for various terms, in various animals, it grows by endosmosis from the mother's blood. Various modifications of this process are found, and various degrees of development are thus attained. In no case, however, does it proceed so far as in the gallinaceous kinds; no one of the mammalia is at birth independent of the mother for food.

To those who have observed the various domestic animals, this difference of development at birth is familiar; the calf, the colt, the pig, the kitten, the rabbit, the rat, are well-known instances. But we have not yet reached the lowest extreme of intra-uterine development; far below, among the implacental mammalia (the monotremata and the marsupials), we find the embryo driven forth from the womb, after a short stay, and rudely and perilously (as we should think), transferred to a new abode, and to a new mode of nutrition. We have spoken of the tadpole as a reptilian larva; here we may fairly say that we have found one among the mammalia. This embryo has just one-thirtieth of the adult length, and five hundred-thousandths (.00005) of the usual adult weight. These proportions would be represented by a human embryo 2¼ inches long, and weighing 48 grains. The human embryo at three months is certainly much more developed than the young marsupial at birth. And having now done with external endosmosis, he must *drink* for his life. The nipple does not merely conduct the milk into his mouth, but forces it by muscular contraction into his stomach, deglutition being impossible in his low condition. As in his previous state, the mother's blood was brought into contact with the absorbing chorion, so now is the mother's milk, without any effort on his part, presented to the absorbents of the stomach. In view of his rudimentary state, a wonderful provision has been made whereby he still receives warmth from his mother's body; the marsupial sack contains and shelters him. Thus cherished and nourished, he is safely carried on to the independent state.

And here let us pause and look at this marsupial embryo, that we may see what lactation is. He has advanced about one-fifth of the way from conception to the independent state; four-fifths of the journey are yet before him. His sole reliance now is on his mother's milk. Not only must the milk do for him what it does for other animals, but it must perform the far more delicate and difficult work of bringing him through the intermediate embryotic condition. Here, then, in the marsupial, we see lactation in its highest manifestation. Here, too, we see plainly that it is the complement of ovarian and uterine nutrition, and that it must therefore vary in extent and influence inversely with the sum of these.

The nutrition of the germ, until it has reached the independent state, is thus seen to be carried on in four ways:—

1st. Simply as in the chicken, by absorption of the yolk-food.
2d. The yolk-food being insufficient, by means of additional nutriment furnished by the parents, as among the greater number of birds.
3d. The yolk-food being very small, by additional nutriment obtained by the larva during his active term. This mode we have found among reptiles as well as among insects.
4th. The yolk-food being very small, nutrition is carried on by two additional processes, in both of which the nutriment is obtained from the body of the mother:—
    1. By intra-uterine endosmosis.
    2. By lactation.

These four modes may be thus indicated:—

1st. The ovarian.
2d. The ovarian and parental.
3d. The ovarian and larval.
4th. The ovarian, uterine, and mammary.

Lactation is confined to the last of these four classes. The facts relating to the other classes have been presented, that, by a wider induction, we might rise to a higher generalization, and view lactation as it appears to the general physiologist. We could not otherwise discern the exact aim and consequent extent and limits of this function, confined as it is to a few of the higher animals. Its object is now seen to be to carry on the work of development and nutrition commenced in the ovary and continued in the womb. We find it varying in extent and influence from the well-developed ruminant to the helpless, unformed embryo of the marsupial tribes.

What, then, is lactation, regarded as a function intimately connected with the development of the more highly organized animals? It is a part of the great process of generation, occupying from one to four-fifths of the entire period during which the quickened germ is dependent on the mother's body for nourishment. During its continuance, the increase in weight is from threefold to five hundred. It receives the fœtus in the condition and at the stage to which the uterus has carried him, and furnishes the materials necessary for his further growth and development.

But this is not all that lactation does. The most evident peculiarity of animal existence in the higher classes is voluntary motion and bodily activity. These demand large supplies of food. All movement in animals involves decomposition of the structures. To repair these losses, food is needed in much larger quantity than for the mere increase of the body. The ovarian and uterine life differs but little from vegetable existence. But when the young animal is driven forth from the womb, he enters upon a career of movement and activity. The respiratory movements must take place at birth, and gradually the voluntary muscles begin to act, and this action continues steadily to increase. The demand for nutriment is then much greater, during the period of lactation, than in the previous stage. The increase of the body is positively much greater, and the wants of an ever-growing activity greater still.

But we have not yet told all that lactation does. In the higher animals, the vital heat must be maintained in order to have vigour and activity. The temperature of the body must not fall below 100°, even when the external temperature is 150° lower. While yet in the womb, the fœtus partook of the mother's heat, and as there was no material increase of her own external surface, there was no necessity for any serious increase in the activity of her own heat-evolving functions. But now the young animal, with his proportionally immense radiating surface, is placed in the midst of very different circumstances. He has been introduced, perhaps, into an atmosphere the temperature of which is 75°, or 25° below his own standard. Perhaps, on leaving the womb, he finds himself floating in the waters of the frozen ocean. His heat must now be supplied from his own organization; he can no longer depend upon his mother's body for warmth. The internal combustion began with his first breath. In order to its continuance, food must be supplied, containing oil, that, by the proper chemical union with the oxygen of the air, heat may be evolved sufficient to sustain his temperature. Without this fuel-food, the internal combustion will decline, the temperature of the body fall, and languor and death must follow.

In view of these things, we may now say what lactation is. It is the function by which food is supplied to the new-born child: food for growth; food for development; food to repair the losses caused by vital activity; food to furnish fuel for the internal combustion.

As a food-supplying function, therefore, it is the most efficient in the whole course of the generative process. No such demands are made by the fœtus on the mother's energies during the previous stages. Materials for growth are almost all that he needs until birth. But from this time onward until able to use the ordinary food of his kind, he looks to the mother for that nourishment which will enable him to maintain his temperature, to move, and to act.

The organs of this function are the mammary glands. They are found under many varied forms, from the cæcal follicles of the ornithorhynchus to the elaborate and complex mamma of the higher animals.

These organs have an intermittent functional activity. It does not at first commence until the termination of the previous stages of the generative process. It continues until its work is finished, or until another generative process begins.

The product of this mammary secretion is milk. Let us examine its physical and chemical qualities, that we may see its fitness to perform the great work of nutrition.

First, it is liquid, and can therefore be drawn from the gland in such quantity as is needed at the time. Its liquidity is indispensable, too, that it may be received by the young animal and swallowed. In some animals, it must, in addition, be injected by muscular contractions into the stomach of the young.

Second, its temperature is that of the body of the mother, and consequently it has no chilling influence upon the stomach of the child.

Nor are its intimate structure and chemical constitution less suited to the wants of the young animal. Of these wants, the first in order of time is warmth. The radiation from his relatively extensive surface would soon lead to fatal results were there not a constant evolution of heat within. The milk supplies this fuel-food in such abundance that it is not usually all consumed. Accumulations of fat, the indices of this excess above the immediate wants of the young animal, commonly take place. His genial warmth and vital activity indicate the same sufficiency. Accurate observation shows that the temperature of the blood is fully maintained.

The next want of the young animal is material for growth and development. This material, needed from the moment of impregnation, has been previously derived first from the yolk-food, and afterwards from the mother's blood. It is evident that the yolk-food of the chicken must contain all the elements necessary for the formation of the body of the bird; the germ, inclosed in the shell, being precluded from all possibility of gaining any other supply. The blood of the mother contains all the elements of her own body, and consequently all existing in the body of the child, and required for its growth and development. The embryo is thus placed, during the intra-uterine period, in close and constant relation with a liquid rich in all the elements of its own organization. These elements are at least sixteen in number, viz., oxygen, hydrogen, carbon, azote, chlorine, iodine, fluorine, sulphur, phosphorus, silicon, potassium, sodium, calcium, magnesium, iron, and manganese. But not only are the elements there, but the organic combinations too, such as the fœtus requires: albumen, globulin, fibrin, hæmatin, margarin, olein, lecithin, cholesterin, serolin, chlorides of sodium and potassium, phosphates of lime, magnesia, potassa, soda, iron, and manganese, fluoride of calcium, and other most useful combinations. Thus placed in the midst of such supplies, the fœtus may well appropriate all the materials that he needs. But the time comes at length for a great change—the fœtus must be driven forth, and his contact with the mother's blood ceases from that hour. And yet his organization is incomplete; his structure is by no means finished. Let us turn to the case of the young marsupial, where the placenta did not exist, and where this uterine endosmosis has lasted only a few days. This rudimentary embryo, now in the marsupial sack, can no more dispense with the sixteen elements of his body than can the fœtuses of other animals during the latter part of their intra-uterine abode. The *blood* of the mother has done but little for him; her *milk* must do the rest, and, constituted as it is by Divine wisdom to suit his need, the young marsupial in all his feebleness is safe. No element of his body is wanting in this wonderful secretion, and forced as it is by muscular contraction into his stomach, rich in all the materials of growth, his progress is rapid to the independent condition. Thus, then, from the necessities of the marsupial we might infer the general composition of milk. But the facts ascertained by chemical analysis far transcend all our conceptions thus acquired. Not only do we find all the elements, but many of them in the same combinations as in the body and blood of the child. Four protein compounds, containing oxygen, hydrogen, carbon, azote, and sulphur, several oils, and more than ten mineral salts, enter into its composition. And what is more remarkable still, one of these salts (phosphate of lime) is found in such combination with these protein compounds, that though itself insoluble, it may be readily absorbed. This union of phosphate of lime in large proportions with casein, with albumen, and with albuminose, is one of the most important and interesting facts in relation to the composition of milk. Indispensable as it is in the formation of teeth and bone, it is thus, notwithstanding its insolubility, freely introduced into the system in an available form.

We have referred to the butter as fuel-food. In cow's milk the butter consists of ten oily substances: olein, butyrin, caproïn, caprylin, caprin, myristicin, palmitin, stearin, butin, and lecithin. In the actual state of chemical knowledge, it is impossible to state the precise use of these several oils. Whether they result from the original differences in the articles of food, but subserve the same purpose in the body, or whether they are there with reference to distinct and peculiar wants of the young animal is not known. Being deficient in azote, they do not probably contribute directly to the formation of the azotized tissues.

One of these oily substances, however, deserves and must receive more careful consideration. It has long been known that the nervous system has a peculiar constituent, a phosphorized oil. Its origin in the young animal has been discovered by Gobley, who found it in the yolk. So largely does it enter into this that it has been named lecithin. It has been found in human blood in the proportion of five ten-thousandths: in the blood of pregnant women ninety ten-thousandths have been found, and in the blood of the umbilical artery seventy-five ten-thousandths. This oil being the special constituent of the nervous system, is furnished by the blood for the functional use of the system and for its growth. It would therefore soon be exhausted unless a supply from without were obtained. In the event of such a failure, the most serious consequences might be expected. Not only would the nervous system cease to grow and thus lose its relation to the rest of the body, but its activity would decline, and consequently the energy of all the functions. With a failure of nerve-force would coincide a failure of circulation, of heat, of digestion, of absorption, and of secretion. Indeed, every vital process would suffer from the deficiency of this energizing agent. And the evil would go on increasing. A weakened digestion would lead to a still further diminution of the already deficient energy, and thus by mutually depressing interactions, the decline would continue until the termination of life from inanition.[1]

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[1] *Conditions of Calorification.*—What are these conditions? They are: 1st. Good air, *i. e.* air containing a due proportion of oxygen. 2d. Good blood, *i. e.* blood containing a sufficiency of combustible material. 3d. A sufficiency of good air in the pulmonary cells. 4th. A sufficiency of good blood in the pulmonary capillaries.—These four conditions are indispensable to full calorification. If the air be deficient in oxygen, or be introduced in too small quantity, it will be in vain that the other two conditions exist. And if there be not enough of fatty matter in the blood, nor a sufficient impulsion from the heart, the former conditions will be of no value. Two of these conditions are chemical, relating to the composition of the air and of the blood; the other two are mechanical, relating to the performance of the respiratory and circulatory acts. These last are under the influence of the nervous system, and will vary with the nervous energy.

If then, heat is to be evolved in sufficient quantity, we must have not only enough oxygen in the air, and enough oil in the blood, but we must have a supply of nervous power to induce free respiration by means of muscular action, and strong contractions of the heart, that the blood may be forced rapidly and readily through the capillaries of the lungs. With full respiration and active circulation, a sufficiency of oxygen will be mingled with the blood to furnish an abundant supply of caloric. With deficient nervous power, this vigorous action of the muscles of respiration and circulation is impossible. All pathological observation settles this point. It is a wonderful fact, that butter contains not only the fuel, but the material necessary for its proper combustion. It is thus a self-regulating article. Is the supply of fuel small, the consuming power is proportionally reduced. With an increase of the consuming power, coincides a proportional increase of the material to be consumed.

From these facts we may readily understand how a child may be fat and yet be deficient in strength and in vital heat. Starch-fed children are often fat, and yet are languid and weak. The starch has been digested, but as it contained no azote, it could not nourish the tissues of the body; having no phosphorus, it could not supply

But these serious and fatal results cannot occur in a case of normal lactation. The needed lecithin is furnished by the milk in sufficient quantity to supply all the demands of the system. In cow's milk the lecithin forms three thousandths of the whole. A calf obtains from twenty pounds of milk (his usual daily allowance) about one ounce. An infant three months old receives about forty-six grains daily, or two pounds in the first year. This amount, when compared with the quantity existing in the nervous system, is very great. We see then that it must be for the most part expended in nervous action, not in the growth of the nervous system. And who that knows the almost incessant activity of young animals (when awake), can wonder at this large consumption?

The uses of the butter are thus seen to be: to supply fuel for the internal combustion, to furnish oil for the tissues of the body, and to supply the special constituent of the nervous system to be employed in its growth and activity.

So much uncertainty still rests upon the uses of the sugar in the milk, that we leave that matter untouched in this paper. It was once supposed to be merely fuel; but the tendency of physiological research is to assign to it other important uses.

The butter and sugar contain no azote, and are therefore ill-adapted to the development of the tissues of the body, which contain so much of this element. It is not known that the bodies of animals have power to transform an unazotized into an azotized compound. In the present state of chemical knowledge we are led to suppose that azotized combinations must of necessity exist in the food of animals. In milk, they form from one and a half to five per cent. of the whole—or from thirteen to thirty-three per cent. of the solid portion. This statement is made here for the purpose of showing that milk is not the weak food that many suppose. Adults among nomadic tribes depend upon it to a great extent, and find it a strengthening diet. The vigour and rapid development of young animals bear witness to the same truth. Indeed, it may be safely said that under no conditions of life is there so rapid and healthful increase as during the season when milk is the sole article of food.

The duration of this function varies greatly in different animals. In some of the marsupials it lasts four times as long as the term of gestation; in the ruminants only two-thirds as long as gestation. Thus compared, lactation is in the former as twelve, while in the latter it is as two. It is thus six times as long relatively. And this difference should not surprise us when we con-

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the wants of the nervous system. It has thus failed to produce heat or general energy. Not so with butter. The lecithin excites the nervous system to efficient action, and all the functions feel its influence. And thus the butter-fed child is often less fat than one fed on starch. But in all that constitutes bodily well-being, he is far in advance.

To promote calorification, there is no equal to butter among the articles of food usually given to infants. It is probable that no substitute for it will ever be found.

sider the different stages of development at which lactation commences in the two classes.

The nature of the usual food of the animal has doubtless an influence on the normal duration of this function. Where this food is difficult of digestion, the young animal must attain more general vigour before he can be safely weaned. The carnivorous and insectivorous animals may therefore be weaned at a relatively earlier age than those using more refractory food.

Normal Lactation in the Human Race.—In vigorous women the secretion of milk is copious. And this large amount is indicated in the unimpregnated state by the great development of the mammary glands. In no animal with which we are acquainted is there a larger promise in this respect. The amount ordinarily furnished by a good nurse is from one and a half to two quarts daily, or from four to five pounds. But cases often occur in which two children receive abundant supplies from one mother, involving a secretion of eight pounds at least. An infant three months old will take from forty-eight to sixty-four fluidounces daily in six or eight half-pint doses. During the first year therefore he will take from 1000 to 1300 lbs.

What is the composition of this milk? Without entering into long and tedious details, it may be simply said that by the latest and apparently the most exact analysis, its composition is:—

Butter	20.76	1000 lbs. therefore contain	Butter	20.76 lbs.	1300 lbs. therefore contain	Butter	27 lbs.
Casein	14.34		Casein	14.34 "		Casein	18½ "
Sugar	75.02		Sugar	75.02 "		Sugar	97½ "
Water	889.88		Water	889.88 "		Water	1157 "

In 1000 lbs. of milk there are 1.6238 lb. of salts, or 26 ounces, of which 0.5736 lb., or 9 ounces, are phosphate of lime.

In 1,300 lbs. of milk the salts amount to 2.1 lbs., or 33½ ounces, of which 12 ounces are phosphate of lime.

It thus appears that, during the first year, the child receives from 110 to 143 pounds of dry solids. He may thus readily gain 15 or 20 pounds in weight (implying less than three pounds of dry solids), and yet have a large residue, from 107 to 140 pounds, to be expended in the production of heat and in the activity of an energetic vitality. A child thus nourished can make teeth and bone without difficulty; his functional activity need never be suspended for want of material; atmospheric changes may be successfully resisted, and zymotic diseases will have little power.

And where, in the whole range of animal existence, will you find a more beautiful object than a vigorous healthy child? Look at his deep and peaceful sleep; see the bright sunshine of a pleasant dream upon his gentle face. Look at him as he awakes. Listen to the sweet sounds he makes for his own pleasure, or to attract the notice of those near. And if he should at last break out into loud cries, see how quickly all traces of sorrow pass away and bright smiles replace them when his mother comes. See the eagerness with which he takes his food; the intense earnestness with which he clings to the abounding breast; and the full and deep satisfaction when this want is supplied. And when able to play, how loud and merry his laugh; how joyfully he receives caresses, or rides upon the knee, or springs in the arms of the parent or the nurse. There is no happier animal than a healthy child; nor is there anywhere to be found a more regularly operating and uninterrupted harmony of the vital functions. The beauty and energy of the outward frame are not more striking than the symmetrical development of the mental powers. The close and careful and patient observation, the cautious experiment, the unsuspecting credulity, the prying inquisitiveness, who has not beheld with admiration and delight?

This is infancy under the influence of favourable physical conditions. But alas! how few children among us progress thus steadily and rapidly during their first two years! How commonly do we associate with infancy the ideas of sleeplessness and fretfulness, and all manner of gastric, intestinal, and nervous disorders! Why is it that "teething" does not mean the steady, silent, unnoticed development of the teeth, but salivation, and fever, and diarrhœa, and convulsions, and death? It is not pretended that there is never any other cause but insufficiency of proper food, but there is reason to believe that four-fifths of the sufferings of infancy arise from this source. And how can it be otherwise? Look at the mothers, and say how many of them can give daily three or four pounds of good milk to their nurslings. How many can furnish 110 or 140 pounds of dry solids in the first year? How many can satisfy, can fully meet the demands of even a feeble child? *A strong, vigorous, fat woman* almost always loses weight while nursing her child. The milk draws away more than the stomach of even such a woman can replace, and the balance is taken by absorption from her previous accumulation.

And here listen to an important practical remark: A woman loses in an ordinary parturition not more than 20 pounds, containing less than 3 pounds of dry solids. This amount furnished in nine months is at the rate of 4 pounds of dry solids a year. Many women fail to furnish fully even this small amount. The infant at birth is small and meagre, looking like a starveling. Is it to be expected that such a mother will make a successful nurse? If unable to furnish this small amount, how can she supply thirty or forty times as much?

The truth is, that a woman in fully nourishing her child, must furnish as much milk in proportion to her weight as a good cow. A woman weighing 130 pounds will give daily 4 pounds of milk, containing about 5 ounces of dry solids; the cow weighing six times as much (780 pounds), will give 20 pounds of milk, containing 30 ounces of the same. It should not then surprise us that so many mothers fail to supply enough food for their infants. It requires great physical energy and powerful digestion to perform this work. How few mothers are thus endowed! If we may judge by the amount of food consumed by a vigorous woman during the period of lactation, we should decide that the ordinary labour of a working man is less exhausting than the function we are considering. Certain it is that a vigorous woman of strong digestion, while nursing a child, will eat largely, and yet lose weight.

The cases in which natural lactation fails are so numerous as to excite the deepest concern. Human milk can seldom be obtained, and none of the usually employed substitutes ordinarily succeed. Is it then too much to hope that physicians will give serious attention and thoughtful consideration to a plan offering a substitute for human milk scientifically correct and practically successful?

From what has been said of the adaptation of milk by its peculiar and admirable constitution to the wants of the young animal, it follows of necessity, that nothing but milk can be proposed as a substitute for the natural food. The only kind that in this country can be readily and certainly obtained, is that of the cow. But the various kinds of milk are not identical in composition, being adapted to the different degrees of development at birth of the young. The ruminants are the most advanced in this respect, the human infant is far behind. It cannot then be supposed that milk adapted to the stomach of a calf would suit that of a new-born child. Common observation agrees with chemical analysis in declaring that there is too much casein in the milk of the cow to be tolerated by the child. This is a well-known fact, and every one waters the milk. But "how much water must be used?" and "will watering do no harm?" are questions to be answered only by careful study of the milk and close observation of its effects upon the child.

Cow's milk contains	Butter . .	38.59	While human milk contains	Butter . .	20.76
	Casein . .	40.75		Casein . .	14.34
	Sugar . .	53.97		Sugar . .	75.02
	Water . .	866.69		Water . .	889.88

Cow's milk, therefore, contains nearly three times as much casein as human milk, but less than twice as much butter. In cow's milk, the butter is to the casein as 100 to 105; in human milk, as 100 to 70. If then, by dilution, we reduce the butter to 20.76, we shall have 21.92 of casein, or 50 per cent. more than in human milk. With such an excess of casein, we cannot hope to succeed. The stomach of the child cannot digest it, and it will thus pass through the intestinal canal, irritating as it goes. Debilitating diarrhœa and, perhaps, vomiting will occur, and the attempt fail. This is the usual experience of those who use cow's milk for infants, and often leads to the abandonment of milk and the substitution of farinaceous food.[1]

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[1] The food of infants should be all absorbed. During the fœtal state, the food of the body is obtained by endosmosis from the mother's blood. During the period of lactation, it comes from the mother's milk. In this milk there is no refuse matter; all is absorbed and passes into the circulation. No portion of the milk passes from the stomach through the intestinal canal to the rectum. The feces of infants are the excretions of the intestinal canal and its various glandular appendages. The lower

If, by a further dilution, we reduce the casein to 14.34, we have only 13.58 of butter, or less than two-thirds of the proper proportion. Such milk may for a season seem to suit the child, but before long it will be found that he does not thrive. The reason is plain. The right proportion of butter is 20.76; this warms a child, and supplies nervous energy. But, by witholding one-third, you lower the temperature of the body and deprive the nervous system of one-third of the special nerve-food, the indispensable lecithin. What wonder, then, that in a short time pallor and languor supervene, and the health evidently declines. Continue this food, and there is one result—starvation. Restore the full supply of butter, and, if matters have not gone too far for recovery, warmth and energy will gradually return, the downward progress be stayed, and vigour replace debility.

It is thus evident that by no mode of dilution can ordinary cow's milk be made a substitute for human. There will be in every case an excess of casein, or a deficiency of butter. So long as the butter is to the casein as 100 to 105, instead of as 100 to 70, so long must dilution fail to adapt it to the wants of the child. But if this original proportion could be changed to that existing in human milk, we might have hope of success. And we proceed to show how this may be done.

If we leave at rest for four or five hours ordinary cow's milk, and then remove and examine the upper third, we find in it 50 per cent. more butter than it at first contained. In round numbers, its butter is no longer to its casein as 100 to 105, but as 150 to 105, or as 100 to 70. If then, by dilution of this milk, we reduce the butter to 20.76, we have 14.34 of casein, as in human milk.

Another, and in some respects, a better mode of obtaining the same result is by using the latter half of the milk furnished by the cow. The former half contains 22.18 of butter to 41.63 of casein, while the latter half has 54 of butter to 38 of casein. Here, again, the right proportion exists, and, by proper dilution, may be made most accurately to resemble in its chemical constitution human milk.

To show the accuracy of this imitation, let us prepare some of this milk

part of the canal may thus be considered as the excreting duct of the liver, pancreas, and the glands of the mucous surface.

What wonder, then, that this duct should be irritated by the presence of foreign bodies (lumps of curd, starch granules, &c. &c.), and that this irritation should continue so long as these foreign bodies remain in contact with its surface?

No fact is more interesting and important than this, that persistent diarrhœa often ceases at once when suitable food is given. By suitable food we mean food that is all absorbed. Three or four hours after the first dose of such food, the diarrhœa often ceases entirely.

Bearing this truth in mind, let us never expect health so long as foreign substances are found in the feces of infants. Even small and smooth particles of curd produce great irritation, and, in many cases, the ingestion of such food produces almost immediately a discharge of mucus holding in suspension these offending substances.

by the addition of sugar and water. Its actual composition is butter 54, casein 38, sugar 53, and water 855. By adding sugar 142 and water 1458, we have butter 54, casein 38, sugar 195, and water 2313. Reducing this to thousandths (that we may compare it with the composition of human milk, as previously given), we have butter 20.77, casein 14.61, sugar 75, and water 889.62. The difference is unworthy of notice.

Not only may ordinary human milk be thus closely imitated, but the colostrum also. To do this, during the first month of the child's life, we must use milk containing from 75 to 80 thousandths of butter, or from 94 to 107 per cent. more than the ordinary milk of the cow. This exceedingly rich milk may be obtained by taking the upper *eighth* instead of the upper *third* of milk left to repose for four or five hours. It may also be obtained by using the last *tenth* of the milk furnished by the cow. In the following schedule, the milk of the first month is of this peculiarly oily kind.

It will be seen from this schedule that, by the gradual diminution of water, an attempt is made (in imitation of the natural process) to adapt the food to the growing energy of the child. It will, of course, be understood by every practitioner that, in this schedule, age is used to indicate development. Some children are two or three months behind their age, and must be fed accordingly. In general, it is better to begin with milk more diluted than the age and development would seem to indicate, and then gradually increase its strength. It is better that the food should be insufficient than that it should be indigestible.

SCHEDULE.

For a child	from	3 to 10	days old.	Milk 1000	Water	2643	Sugar	243
“	“	10 to 30	“	“	“	2500	“	225
“	“	1 month old		“	“	2250	“	204
“	“	2 months old		“	“	1850	“	172
“	“	3	“	“	“	1500	“	144
“	“	4	“	“	“	1250	“	124
“	“	5	“	“	“	1000	“	104
“	“	6	“	“	“	875	“	94
“	“	7	“	“	“	750	“	84
“	“	9	“	“	“	675	“	78
“	“	11	“	“	“	625	“	73
“	“	14	“	“	“	550	“	67
“	“	18	“	“	“	500	“	63

The infant should take this food by suction. For this there are several reasons. 1st. It is the natural mode; 2d. We cannot otherwise administer the food at so uniform a temperature; 3d. We cannot otherwise secure a free flow of saliva; 4th. We may thus feed the child in the natural posture, the recumbent. There is less danger of regurgitation, and he sinks to sleep quietly after feeding, if the time for sleeping has come.

An eight ounce vial, with a quill rolled in a long strip of Swiss muslin for a stopper, is the best arrangement for cleanliness and convenience. Tubes having narrow passages cannot be readily cleansed.

A child ten days old will take about thirty-two ounces daily in eight four-ounce doses. The doses will increase in size and somewhat diminish in number, so that at three months seven eight-ounce doses are usually taken. The milk should be given at regular intervals; the good effects of method and strict regularity in this matter are very apparent. The child should be early trained to pass six or eight hours at night without feeding. The temperature should be from 100° to 104°. The child should not be allowed to take the milk too rapidly; ten or fifteen minutes should be given to each dose. The stomach will not then be too much distended, the liquid part being quickly absorbed.

This food thus administered may well be styled *artificial human milk.* In chemical composition, it most closely resembles the natural secretion of the mammary glands of vigorous, healthy women, and it offers to the child all that he needs for growth, development, warmth, and activity. A careful observation of its effects for several years has led to the conviction that it leaves nothing to be desired, and that, on this food, an infant may be reared with admirable results. And by this we mean that health, uninterrupted health, with vigour and energy of the bodily functions, may be regarded as the natural result of the use of this food. We mean that gastric and intestinal disorders do not follow its use, as they so often do that of the milk of mothers. We mean that under its use dentition will be ordinarily a painless process, and that the teeth will be strong and durable. Believing that a large proportion of the sickness and death of infants is the result of insufficient and improper food, we feel sure that, by the use of this artificial human milk, the health and lives of tens of thousands might be annually preserved. We believe that, if generally used, the influence upon the next generation would be evident in a visible increase of health and vigour. In our own household it has proved of priceless value, and we desire that other households may share the benefit.

It is an undoubted fact that in many, very many cases, the function of lactation is imperfectly performed. This deficiency arises from two sources, imperfect development of the genital organs (including the mammary glands), and general debility of the vital functions. The season of puberty extending from 13 or 14 to 18 or 20 years of age, is the only period during which the generative apparatus can be well developed. If this season be lost, the evil can never be repaired. The development must occur *then* or *never.* How important, then, that girls should enter upon and pass through this season under the most favourable physical conditions. Good food, good air, sunshine, muscular exertion, everything that tends to bodily vigour, should be secured to them during this period of life. Sedentary occupations, excessive mental exertion, late hours, insufficient sleep, are evidently most unfavourable to development. And yet in this last sentence we have sketched the history of a very large number of girls of all classes. The daughters of the rich give too much time to study, to reading, to music, and the other fine arts, and are thus deprived of sunshine, fresh air, vigorous and invigorating exercise, and consequently of abundant and nutritious food. The daughters of the poor suffer from confinement by needlework or some equally sedentary occupation. The long-continued labour in manufacturing establishments is a fruitful source of this evil. In all these cases the bodily powers are impaired, very little nutriment is obtained, and consequently the great changes belonging to the age of puberty cannot fully take place. The chest and pelvis are not properly developed, the menstrual function is not regularly and fully and painlessly established, and the mammary glands fail to attain their proper size. Nothing is more evident than the truth of these statements. Painless, regular and full menstruation is rarely seen, while irregularity and agonizing pain in connection with this function are very common. In many cases this want of fulness of development is such that marriages are unfruitful, at least for a long time. And when impregnation *does* occur, the period of gestation is one of nausea and lassitude and debility. Abortions frequently take place and impair most seriously the general health. And in more fortunate cases, how often is the child at birth feeble and ill-developed. The mother's strength is still further diminished by the labours, and sufferings, and losses of parturition. Her breasts do indeed become turgid, a milky secretion takes place, but it is miserably insufficient for the child. It continues for a few weeks, and then ceases. Every physician knows these facts by personal observation; they are constantly occurring.

In such cases the child is not suffered to perish without an effort to save him. Occasionally a good nurse is obtained, who can fully supply his wants. But good nurses are rare, and nurses of even an inferior description are not to be found in sufficient numbers to supply one-tenth of the children needing food. Cow's milk is often tried and often abandoned, because of the disorders it produces. Panada, arrowroot, cornstarch, or some other farinaceous food is then used by some mothers, while others use various preparations of flesh in the form of broths. The consequences to the children, of the use of these various articles of food, are most injurious. Pallor, languor, debility, indigestion, vomiting, diarrhœa, painful and difficult dentition, convulsions, marasmus, cholera infantum, and dropsy of the head, are some of the results of this imperfect and improper supply. The feeble infants are unable to resist atmospheric changes, so that the winter's cold and the summer's heat are almost equally injurious, while the starving and wasting body offers to zymotic diseases an admirable nidus. Tubercular deposits frequently take place, and in all these ways the mortality is fearful. Pestilence ever follows close in the steps of famine, and these little starving children are swept off by thousands.

In view of these grave facts, what is our duty as the medical advisers of the people? We should seek to influence by precept and example the parents and guardians who have girls under their care. We should urge them to use every effort for the prevention for the future of these evils, now, alas! so common. We must endeavour to have the next generation of women healthy and vigorous, able to bear children and rear them too, so that they may thrive and prosper.

And in the many cases all around us of children now needing food which their mothers' breasts fail to furnish, we should teach the mothers to prepare such food as is really a substitute for human milk. Turning away from starches and all such innutritious substances, we should show them how to obtain from the milk of animals *true food.* In the country this may be easily done, and mothers should be instructed how to use it, modifying it under medical advice, to suit the age and development of the child.

But what shall be done in cities? Shall the thousands there perish by starvation, or shall they too be fed? Why may not the country supply food for *them* as well as for the rest of the population? True, it will demand care and skill to conduct such an enterprise, but how can care and skill be more usefully employed than in rescuing these little wretches from the doom that awaits them? No physician is so useful as he would be, who should successfully perform this work. "The blessing of him that was ready to perish," would come upon him, and he would cause many a mother's "heart to sing for joy."

The details of this enterprise would be few and simple. The latter half of the milk of the cow should be used for the children, and diluted and sweetened for each child separately. It should then be bottled, and labelled, and addressed. It should be distributed daily. The physician having charge of its administration should visit each child at least twice a month, to ascertain its progress, and direct the composition of the milk in accordance with these observations of his own. Care and skill will here produce admirable results, and no parent, after seeing them, will fail to obtain this food for his hungry little ones.

On this plan the children in cities might be as well fed as those in the country, and much of the dreadful mortality be avoided. How much better this than to spend months of anxiety over a starving child, while the physician is vainly seeking to relieve his sufferings with drugs. He needs butter and casein; give him these in proper combination with sugar and water, and there may be hope. Without these hope is vain.

WILLIAMSTOWN, MASS., *May*, 1858.

ART. III.—*Fatty Degeneration of the Heart—Death from the Inhalation of the Tincture of Chloroform.* By WILLIAM A. HAMMOND, M. D., Assist. Surg. U. S. Army. (Read before the Biological Department of the Academy of Natural Sciences of Philadelphia, April 19th, 1858.)

PRIVATE S——, of Company "C," 2d U. S. Dragoons, was admitted into the hospital at Fort Riley, Kansas Territory, on the 23d day of November, 1856, with an injury of the left elbow-joint, caused by his falling from his horse whilst intoxicated on the afternoon of the previous day. I did not see him till eighteen hours after the accident, when, owing to the swelling and inflammation of the part, I was unable to determine the exact nature of the injury. Erysipelatous inflammation immediately ensued, and lasted for ten days, requiring absolute rest, and the ordinary remedies for its removal. At the end of this period there was still a good deal of swelling, and the motions of the joint were very much impaired. Dr. Coolidge (who in the mean time had joined the post) and myself were unable still to make out the exact condition of the parts; and after repeated examinations, we decided to induce anæsthesia with the view of obviating the great pain caused by the necessary manipulations, and thus to make a more satisfactory examination than had yet been accomplished.

A sponge wet with two or three drachms of the tincture of chloroform was placed in a tubulated bell-glass and held to the mouth of the patient, he having previously removed his coat and stock, unbuttoned the neck-band of his shirt, and laid down on a bed. He continued to breathe the vapor for five minutes without any appreciable result. The pulse, which at the commencement of the inhalation was 100 per minute, remained about the same. The sponge was again moistened with the tincture of chloroform then placed in a towel and again held close to the mouth. Full, deep breathing was directed, and in two or three minutes some excitement was produced. During this period the face became red and flushed, but not to an unusual extent; the respiration was not affected in any remarkable degree, nor was there any notable variation in the pulse. In an instant, however, all was changed; the eyes were turned up, the face became turgid, the muscles became relaxed, and vomiting ensued. My hand was upon his pulse, which, from beating at the rate of 100 per minute, stopped as if he had been struck with lightning. Dr. Coolidge immediately discontinued the inhalation, and judging from the character of the vomited matters, thought at first that some substance was closing the larynx. Introducing his finger into the posterior fauces, he removed a large piece of cabbage. Subsequent to the vomiting the patient breathed two or three times, but it is probable the heart ceased to act before respiration was entirely suspended.

Every means proper in such cases was used to re-excite respiration, Marshall Hall's method among others, but without the least success. Stimulants were thrown into the rectum, the body rubbed sedulously, &c., but no evidence of life was perceived, and after persevering for nearly two hours, we abandoned all hopes of resuscitation.

Autopsy twenty-two hours after death.—Body well developed, no superabundance of fat. Great muscular rigidity, and considerable hypostatic congestion of the back of the head, neck, and body. The brain and appendages were healthy. The stomach was large but not distended with gas, and contained about three ounces of pultaceous matter, and several large pieces of unmasticated and undigested beef. The spleen was about three times its natural size. The liver presented no unusual appearance; it was not minutely examined. The thoracic cavity was free from effusion and pleuritic adhesions. The lungs, especially their inferior and posterior portions, were intensely congested, and of a deep purple hue. On opening the pericardium, the heart appeared of unusual size. The right auricle and ventricle were distended with blood and covered with fat. On removing the heart in the usual manner by dividing the great vessels at their origin, about two quarts of dark thin uncoagulated blood escaped. No coagula were found in the heart or large vessels; the left ventricle was empty. The heart weighed within a fraction of fourteen ounces, and measured in its longitudinal diameter full six inches, and in circumference, at its base, eleven and a half inches. The wall of the left ventricle at its base was $\frac{6}{8}$ of an inch in thickness, at the middle $\frac{5}{8}$ of an inch, and at the apex $\frac{5}{8}$ of an inch. The extreme thickness was one inch. The thickness of the right ventricle ranged from $\frac{1}{8}$ to $\frac{2}{8}$ of an inch exclusive of its fatty covering, which, near the auricle, was quite thick. The walls of the right auricle were extremely thin, and were loaded with fat. The substance of the heart was of a very pale red or dirty pink color, comparatively soft and flabby, less resisting in the right than in the left ventricle, but easily penetrated in both with the finger or handle of a scalpel.

In order to form a more definite conclusion as to the exact pathological condition of the heart, I submitted several sections to microscopical examination; many portions of the right ventricle were thus found to consist almost entirely of fat-cells and oil-globules; in others, muscular fibres were visible. In the left ventricle both fibres and striæ were to be seen, with many fat-cells and oil-globules. The more precise results of the examination are as follows:—

1st. A piece of the right ventricle taken from the central portion of its wall, *i. e.*, midway between its external and internal surfaces, and in which no fat was visible to the naked eye, exhibited under the microscope numerous fat-cells and oil-globules. One hundred grains of this character of tissue, when subjected to the action of ether, yielded 32.75 grains of ether extract.

2d. A section of the right ventricle extending through its entire thickness, and in which fatty deposit was visible to the naked eye, yielded 69.92 per cent. of ether extract.

3d. A portion of the left ventricle, in which no fat was visible to the naked eye, was perceived by the microscope to contain a few fat-cells, and yielded 9.89 per cent. of ether extract.

It is evident, therefore, from this record, that the heart, besides being loaded with fat, was in a state of fatty degeneration. It is worthy of note that there was no *arcus senilis* observed in this case.

A few words in relation to the anæsthetic employed, will not, I think, prove uninteresting.

The anæsthetic issued to the medical officers of the army is (or was at that time), the tincture of chloroform, or chloric ether of Dr. J. C. Warren and others. When properly prepared, it consists of one part of chloroform, and two parts of absolute alcohol, and such was the preparation intended to be furnished. The contents of the same bottle used in this case had been a short time previously used in six cases; one of amputation of both legs; one of Chopart's operation on right foot, and Hey's on left foot; one case of delirium tremens following fracture of arm, and complicated with severe convulsions; one amputation of great toe; and one excision of a portion of the fibula. In all these cases the anæsthetic had acted unpleasantly, and in that of amputation of the great toe great prostration was produced, and the pulse fell from 60 to 40 per minute. By the use of stimulants, &c., further ill effects were obviated.

It did not, however, occur to either Dr. Coolidge or myself, that these consequences were due to the peculiar character of the anæsthetic, but after the death of S—— I submitted it to a chemical examination with the following result:—

The specific gravity was 980.

The reaction was strongly acid.

A solution of nitrate of silver caused a flaky precipitate, soluble in ammonia, and precipitable from this solution by nitric acid, showing, therefore, the presence of chlorohydric acid.

A portion was put into a glass tube graduated to tenths of a cubic centimetre, and an excess of water added so as to destroy the solvent property of the alcohol. The chloroform thus precipitated amounted to but one-sixth of the whole.

The alcohol entering into its composition, instead of being absolute, was the common diluted alcohol of the Pharmacopœia.

The tincture of chloroform was thus shown to be very impure, and not the article contemplated by the medical department. It had been carefully preserved whilst under my charge and that of Dr. Coolidge, in closely stopped bottles carefully kept from the light, so that it is probable the chlorohydric acid had been present from the time of its manufacture.

How far this impure character of the anæsthetic may have tended to cause death in the case related, is difficult to say. I believe, however, that it was not without influence. The condition of the heart was doubtless, however, the chief cause of death. Persons suffering under fatty degeneration of this organ are peculiarly liable to sudden death, and it is also true that there are no certain signs from which its presence can be determined during life. Of fifty-eight cases cited by Dr. Richard Quain,[1] death was sudden in fifty-four.

Two cases have recently been published of fatty degeneration of the heart, in which death occurred from the inhalation of chloroform. In one of them, that of Mr. Erichsen,[2] it took place at the time of inhalation. The other occurred in the practice of Dr. Macgibbon[3] at the New Orleans Charity Hospital. In this latter case death ensued on the day following the administration of the chloroform.

Private S—— was 23 years of age; 5 feet 6 inches high; of ruddy complexion; gray eyes, and brown hair. He was exceedingly intemperate in his habits. He had never, as far as I am aware, complained of any affection of the heart, and never to my knowledge had any symptoms which would indicate disease of this organ.

In the preparation of this paper I have freely availed myself of the notes of Dr. Coolidge, especially those relating to the post-mortem appearances and measurements of the heart.

Art. IV.—*Case of Extra-Uterine Pregnancy—Fœtus extracted per anum, four years and six weeks after the completion of the Natural Term.* By Christopher Johnston, M. D., Surgeon to the Union Protestant Infirmary, Baltimore.

On the 18th of March, 1858, Mary Hamilton, æt. 39, was admitted into the Union Protestant Infirmary of Baltimore. Had supposed herself labouring under dysentery for ten weeks previously; and was, at the moment of admission, extremely emaciated, and much annoyed with abdominal pains, and frequent small muco-sanguineous intestinal discharges, always offensive, and at times mingled with dark semi-fluid feces.

From her own statement, and from an ordinary examination, she was treated for the disease named, especially as she professed to have been a "well woman," before the present attack. A week after her admission, the patient fell under my care, whereupon her treatment was continued, and then modified, but with marked unsuccess; and it was not until the 6th of April that, attention being called to a something which pressed painfully upon her lower bowel, I made a digital examination of both vagina and rectum. Exploration discovered the os tincæ to be very low in the pelvis, but not otherwise displaced; the uterus seemed to expand suddenly from the neck into a considerable tumour, which could be felt through the abdominal walls, in the right iliac region. Within the anal sphincter, the same tumour could be perceived through the thickened wall of the gut; but at the depth of a finger's length, a culminating point was found, and upon this an opening, an inch and a half wide, by one inch in length, in which was impacted a mass of bony plates, with here and there a thin sharp edge. I at once recognized, I believed, fœtal cranial bones; and upon inquiring of the patient if she had not, at some time, supposed herself pregnant, she replied in the affirmative, but added that that was four or five years since; and, as no child was born, and the doctor attending informed her that she "had nothing but a tumour," the idea of a veritable pregnancy was discarded. In fact, from the time of expected confinement, she had felt a "lump" in her right side (which I also discovered), but she suspected no connection between the tumour and her dysenteric attack; she thought, and her friends thought, that she had dysentery, for she was feverish, had frequent small discharges from the bowel of mucus and fecal matter tinged with blood, and also passed small fleshy masses, likewise bloody, but very fetid. "This," said the patient, "is my

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[1] Medico-Chirurgical Transactions, vol. xxxiii.

[2] British and Foreign Medico-Chirurgical Review, January, 1855, p. 222.

[3] American Journal of the Medical Sciences, January, 1856, p. 261.

"*History.*—I enjoyed excellent health in the beginning of 1853, and even menstruated in April, when it happened that I conceived in the month of May for the fourth time in my life. This circumstance made me unhappy, for I was cruelly treated by my husband, who beat me, as usual, although I declared my situation to him.

"From May until July, I suffered much with pains in the back; and, thinking I had falling of the womb, sought relief in the Lombard Street Infirmary, but, finding no benefit there, I left the institution at the end of three weeks.

"I quickened at the usual time, and distinctly felt movements, which I attributed to a child, from that time forth. I suffered more than in any previous pregnancy, being continually annoyed with pains in the stomach, and most severe ones in the back. By my own calculation, I fixed upon the third week in February, 1854, as the time of my confinement; but my expectations were far from being realized. On New Year's night I was seized with vomiting, which ceased, however, under the treatment of my physician; yet the respite was brief, for labour-pains, or what I believed to be such, succeeded, so that, on the 3d of January, the pains being very active, I was declared to be so near the end of my labour, that delivery was expected in one half hour. I was doomed to disappointment, however, for although the pains, especially around the navel, continued until the 6th (three days), no child made its appearance. Still its movements were perceptible until the night of the 6th, when I experienced a sensation 'as if the child stretched itself out,' and thenceforth all motion ceased. Irregular pains continued for three weeks, in spite of treatment, at the end of which time I left my bed, and resumed my duties.

"My medical adviser had laboured under the impression, after the 6th, that my time was not come; but as the third week of February passed without further developments, and as auscultation and the touch gave him no evidence of the existence of a child, he assured me that I had 'only a tumour,' and in this opinion I coincided, seeing that the proof most conclusive to me of pregnancy, was wanting, and that *menstruation* recurred in March (1854), and has been regularly periodical ever since.

"The tumour now began to subside, and with it my strength. Pains in the back and abdomen annoyed me continually; my bowels were constipated, and emaciation sadly reduced my former stout frame.

"Things remained in this condition until the night after Christmas, 1857; then I was attacked with pain in the stomach, and irritable bowels, and passed by stool thin matters, corruption, bloody slime, and shreds of an offensive substance. Believing that I had dysentery, I took laudanum for it, without benefit, however; until, being reduced to the skeleton you see, and apprehending a fatal termination of my complaint, I entered this Infirmary on the 18th March, 1858."

The account given by the patient of herself was strongly corroborative of my diagnosis; and in view of all the facts of the case, I determined to remove the erring body. On the 8th April the patient was rendered insensible by chloroform, and its effect maintained during the operation, by my friend, Dr. W. C. Van Bibber. With a pair of stout polypus forceps, guided by the index and middle fingers of my left hand, introduced through the anus, I first enlarged the aperture of communication between the sac and rectum, and then extracted the cranial bones, piece by piece. One arm next followed; then the other arm, with the trunk attached, and to it one leg; and finally, the remaining leg. There was no trace of placenta or cord discoverable. The fœtus was female, about sixteen inches in length, and so much decomposed that the cranial bones, those of the forearm and leg, the clavicles and the ribs, were denuded; and the scalp, other portions of the skin, and the brain, had been expelled. The weight of the mass removed by the operation was about three and a half pounds.

The sac contracted notably after the extraction of the contents.

One ounce of chloroform, in divided doses, was administered of necessity; and so persistent was the effect, that forty-five minutes elapsed after the operation before perfect consciousness was restored by the use of energetic means. About six ounces of blood, and a greater quantity of putrid ooze, flowed out of the gut; but there was no after-hemorrhage.

April 11. The after-treatment consisted in a light yet sustaining diet, a nightly anodyne, the employment of the catheter, and an ablution of the rectum at bedtime with warm water. The patient is rapidly improving without untoward symptom; and the anal discharge, which, at first, was insufferably fetid, has become almost purulent and nearly inoffensive.

15*th*. Patient still improving.

A slight diarrhœa occurred on the 16th; and inasmuch as this symptom could be distinctly referred to an indiscretion of diet by reason of the appearance in the feces of small morsels of undigested veal and potato, and of the non-existence of fever or abdominal tenderness, a restricted regimen was enjoined, and tinct. kino, with paregoric, administered. On the 18th the diarrhœa ceased; and the patient was sitting up in a rocking-chair, and evinced, according to her own statement, more strength than she had enjoyed for several months.

19*th.* The subject of this communication has notably improved in every respect, is very cheerful, and gives every indication of a speedy convalescence.

I have now satisfied myself, by digital examination, that the fœtal sac is distinct from the uterus, although adherent to that organ—that is to say, the pregnancy was not parietal. The rectum is still sensitive, and the sac discharges a small quantity of pus in the course of its obliteration.

Feeling anxious to verify some of the statements of the patient, I referred to the Record of the Lombard Street Infirmary, and to her former physician. The record shows the diagnosis "three months pregnant" to have been entered in her case; and certainly this was a most proper opinion, and as nearly exact as the circumstances at the time would allow.

The declaration of her physician differs from her own in this only, that before the 6th January, 1854, he thought the woman pregnant; but that subsequently, being at a loss, he had arrived at no definite conclusion whatever.

With regard to the administration of chloroform, I deem it of consequence to observe that the recipient should be fasting, and must continue in the recumbent position during the direct action of the anæsthetic, and afterwards until its effects shall have entirely passed away. I object to the employment of patent inhalers or other chloroform traps; and I have found that a very simple contrivance, the materials of which are always within reach, accomplishes in safety and expedition all that is expected of sponge, handkerchief, or valvular apparatus. It consists of a *clean towel*, folded twice in the direction of its length, then rolled into a hollow cylinder four or five inches in diameter, and secured with pins. Chloroform is poured upon the inner surface at several points near one extremity, which is held lightly upon the face so as to encircle the mouth and nose. It is evident that the access of atmospheric air to the lungs must be perfectly free through the widely open cylinder, and that the latter can in nowise interfere with or embarrass the respiration.

It may economize the chloroform to withdraw the cylinder during the expiratory act, replacing it, however, at the moment that inspiration is about being repeated, until the desired degree of anæsthesia is produced.

In reviewing this case, I must express my conviction that the woman had rightly calculated the time of her accouchement, and that the fœtus died in the eighth month of its existence. That the gestation was extra-uterine (not parietal) appears from the facts that the os was not displaced either towards the pubis or sacrum; that menstruation, after the pseudo-labour, was resumed and continued regularly; and that the fundus, much flattened in the direction of the pelvic axis, might be felt between the os and the fœtal sac. In view of the usual termination of ovarian and tubal pregnancies, these forms were excluded; and the case is referred to the abdominal variety of extra-uterine development. The length of time which elapsed between the abortive labour and the spontaneous effort to accomplish the exit of the fœtus through the rectum, favours this opinion; but the period loses much of its consequence when it is borne in mind that there are on record many cases of abdominal gestation of a continuance varying from a few months to fifty-six years. To the list I may add yet another case—for it doubtless was one—of which I derived the hitherto unnoticed account in the fall of 1852, from a marble slab in the ancient cemetery lying just beyond the limits of the beautiful city of Seville, Spain:—

Translation.—May she rest in peace. Passer! read and admire the wonders of nature. Doña Petronila Fernandez, a native of Seville, and widow of Don Daniel Harrington, conceived in the 26th year of her life a daughter that she was unable to bring to light. But at the completion of her 58th year she died, on the 5th February, 1833, in the Parish of St. Ann; and an appropriate operation discovered the fœtus in its natural (?) situation, dead, it is true, but flexible and uncorrupted.

ART. V.—*Remarkable Case of Aneurism of the Thoracic Aorta.* By JOHN H. PACKARD, M.D. (With four wood-cuts.)

FURMAN PIERCE, æt. 38, colored, a porter in a carpet store, became a patient at the Moyamensing Dispensary about the middle of February, 1858. He stated that he had enjoyed good health up to July, 1857, when he had a slight cough; soon after this he perceived a lump in front of his chest. He could not remember having strained himself in any way whatever.

When I first saw him, at the time above mentioned, the lump had attained the size of a pretty large fœtal head; it was seated at the upper part of the sternum, somewhat to the right of the median line. An eccentric or expansive pulsation was very evident all over it, but there was no bellows murmur perceptible on auscultation, nor anything like a thrill; the two sounds of the heart were transmitted, deepened in pitch, and, as it were, renewed or intensified in the tumour. The clavicles seemed to disappear at about an inch and a half from their sternal extremities, but the sterno-cleido-mastoid muscle could be traced quite distinctly at each side, passing over the upper part of the tumour as if to its point of insertion. There was no difference between the pulses in the two carotids; that in the right radial was a little feebler than that in the left, but this peculiarity was not permanent. The head was entirely unaffected; there was no numbness or œdema of the right arm, but some pain; there was a good deal of pain shifting between the shoulders and the tumour itself. There was some stridulous cough, but no difficulty of swallowing; the patient's appetite and general health were good, and he was still pursuing his occupation.

The heart seemed, on examination, to be entirely healthy.

The treatment adopted was of course merely palliative; he was ordered a mixture of liq. morph. sulph. and sp. eth. co., to allay the cough, and tr. acon. rad. gtt. ij, t. d. to moderate the heart's action. A liniment containing aconite was also directed, to soothe the pain and throbbing in the tumour; it was applied only around the borders of the swelling, lest the skin should be irritated, and its thinning hastened. By these means the cough was entirely subdued, his nights were rendered comfortable, and perhaps the increase of the tumour was slightly delayed.

He continued to discharge his duties as porter (which he said were not very laborious) until the early part of March; and it was not till about the first of April that he was obliged to remain in his room; he was not absolutely confined to his bed on the very last day of his life.

The sketches from which the annexed wood cuts were taken were made about the 30th of March, when the swelling was by no means so large as it subsequently became; but it was even then of very unusual size; the side view (Fig. 2) especially shows its great projection forwards.

The increase in the size of the swelling was extremely rapid during the latter stages of the disease; on the 15th of April its semi-circumference was carefully measured, and found to be eight and a half inches transversely, and the same from above downwards. On the 26th, only eleven days subsequently, an augmentation of one inch each way had occurred; at this time, there appeared also a slight discoloration, with some pain, at the most prominent part of the tumour. This discoloration extended, becoming more and more marked; the cuticle was separated at its central part, and seemed to be softened by bloody oozing. On the 2d of May I found the swelling to measure eleven inches transversely, and ten and a quarter from above downwards, in semi-circumference. His appearance now can hardly be imagined; this enormous tumour pulsated strongly with every beat of his heart, and it seemed as if the separation of a slough of considerable size was to be momentarily expected. Still, his appetite was good, he was not greatly emaciated, and his mind was perfectly clear and tranquil. By the advice of Dr. Norris, who kindly saw the patient with me several times, I had directed a plaster composed of equal parts of empl. saponis and ext. conii, to be kept constantly at hand, to be at once applied if the dreaded rupture should take place.

May 6. At about 10 P. M. an opening which would about admit the end of the little finger occurred at the upper part of the discoloured spot. The plaster was instantly put on, and the amount of blood lost was but trifling. He bled again slightly during the night. His third and last hemorrhage, at 6 A. M., was perfectly uncontrollable, and he died instantly.

With the assistance of Dr. Brinton, I made the

Fig. 1.

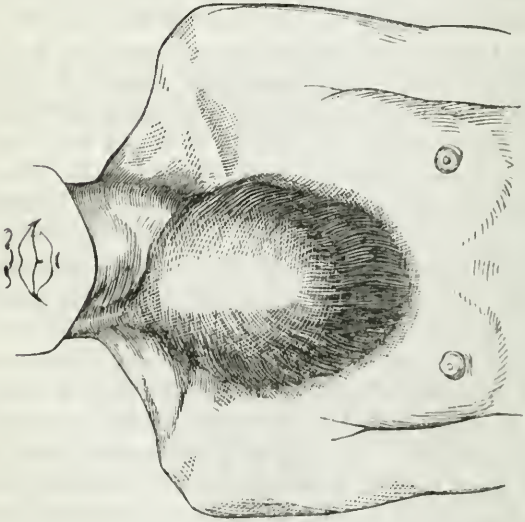
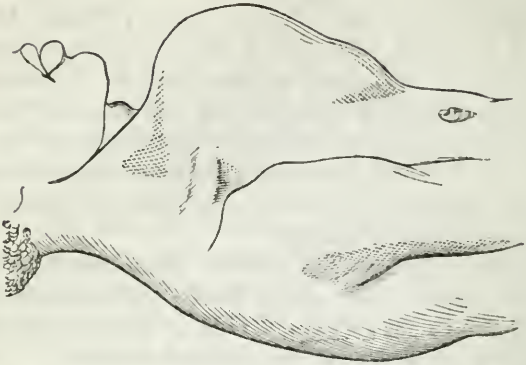


Fig. 2.



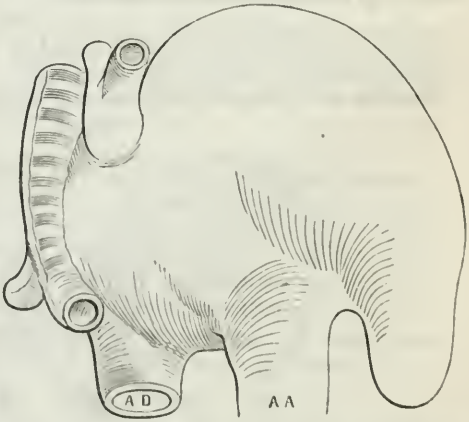
Autopsy, 10½ hours after death. Tumour only examined, and that under unfavourable circumstances.

The anterior wall of the aneurismal sac, as well as the skin lying over it, was extremely thin; the opening through which the fatal hemorrhage had occurred was filled up by a fibrinous clot. The separation of the skin from the sac was not very difficult, except where the sterno-cleido-mastoid muscles had been traceable; these latter seemed to have been converted at this part into firm fibrous tissue, but, as will be further stated, their bony connections were destroyed.

The sac, being opened, was found to contain an enormous clot, very firm at the posterior and lower portions, but much less so above and in front, its consistence gradually diminishing, and its red colour deepening, towards the external orifice, which, as before stated, was plugged up by the only firm clot of recent formation, found in connection with the sac.

On introducing my hand into the sac, I felt, to my amazement, several pieces of roughened bone *within its cavity*. Two of these, evidently remnants of the sternum, lay free, surrounded and supported by half-coagulated blood; they were irregular in shape, bare, and eroded, as if by a solvent action of the blood; the line of separation between them was irregular, oblique, and much like that of a fracture. The end of the right clavicle, and the upper two ribs on the same side, in a similar condition, projected through the wall of the sac; both sterno-clavicular articulations were absorbed. Above the second rib the sternum was entirely gone, except a slender strip which had formed its border on the left side; the inner edge of this strip was bevelled off internally by absorption. The outer and front surface of the first rib on the right side was laid bare and slightly hollowed out by the pressure of the aneurismal sac. It would seem that the dilatation had gone on so rapidly that the bones, so to speak, were not absorbed quickly enough, and the walls of the sac, even in the act of giving way to them, formed adhesions around them. I must confess, however, that I am at a loss to explain satisfactorily the mode in which the sternum was disposed of. Having once broken through the anterior wall of the thorax, the sac enlarged by forming a sort of pouch, passing downwards in front of the sternum, as may be seen in the accompanying diagram.

Fig. 3.



The vessel involved was the aorta, from about an inch above its origin to a corresponding point in its descending portion; the innominate artery was somewhat increased in calibre also, while its length was diminished. The descending aorta was thickly studded with atheromatous deposits. The trachea was flattened at its lower part, and pushed over to the left side of the vertebral column, which remained unaffected. The lungs were perfectly healthy, but had been crowded downwards, and bands of adhesion of considerable length passed upwards from their apices to the sides of the aneurismal sac.

Of the several unusual features presented by this case, the most extraordinary and inexplicable is the condition of the bones. I have examined a great many works, surgical, medical, and pathological, books of reference, text-books and monographs, but in none of them is any allusion made to the possibility even of such an occurrence as the perforation of an aneurismal sac by one or more bones. Nélaton[1] says that in some cases, which are "rare, very rare indeed," the bones curve instead of being absorbed. Broca[2] speaks of the large nervous trunks as being sometimes found traversing the cavity of the sac, and cites a case in point, observed by Rognetta. But here was a piece of bone lying within the sac; there was no trace of any connection between it and any part of the wall of the cavity, nor any clue to the process by which that wall had been penetrated; yet it is perfectly certain that the bone was originally outside of it. I would suggest with some diffidence a theory which is more satisfactory to my own mind than any which has hitherto presented itself, viz., that the periosteum covering the inner surface of the upper piece of the sternum, was absorbed beneath the pressure of the tumour, adhesions meanwhile forming between the sac and the periosteum around the edges of the bone; then the anterior wall of the sac itself being broken down, the bone was loosened from its anterior periosteal layer by the insinuation of the contents of the sac between them, and dropped into the cavity, the anterior wall of which thenceforth consisted of two layers—skin and periosteum, the latter becoming lined by a sort of serous membrane, perhaps by the organization of coagula.[3]

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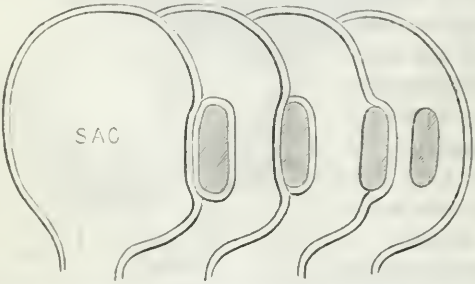
[1] Elémens de Pathologie Chirurgicale, tome i. p. 449.

[2] Des Anévrysmes et de leur Traitement, p. 65.

[3] The idea may perhaps be made clearer by the annexed diagram.

Fig. 4.



All this must have occurred at quite an early stage of the disease, probably before

The mode of termination of this case was also somewhat uncommon, aneurisms of the thoracic aorta generally opening internally. In Mr. Crisp's[1] tables there are 148 instances given of aneurisms of the thoracic aorta; of these, 70 formed communications with the trachea, œsophagus, pericardium, pleura, or pulmonary artery, and only 9 burst through the skin. Broca[2] also speaks of external openings as of very rare occurrence in thoracic aneurisms.

The absence of symptoms arising from pressure on nerves or bloodvessels, on the œsophagus, or on the trachea (for there was no loss of voice, and the cough was very tractable), is somewhat remarkable, considering the very great size of the tumour; and we can ascribe this want of consecutive symptoms only to the continual anterior tendency shown in its development.

Another singular circumstance, which surprised all those who examined this case before death, was the entire absence of any bellows murmur, as well as of aneurismal thrill, notwithstanding the very strong pulsation existing in the tumour, and the impression produced that its liquid contents were very near the surface. This was accounted for after death by the nature of the clots actually forming the channel through which the blood flowed, these being soft and creamy or muddy in consistence, so as rather to deaden sound than otherwise, and thickening gradually towards the real wall of the sac. Broca[3] says the *bruit de souffle* is rarely absent; but he elsewhere[4] states that it may be diminished, or even disappear entirely, in some aneurisms which are partially solidified by the deposition of fibrinous clots. Crisp[5] quotes Laennec as saying that the only pathognomonic sign of thoracic aneurism is the external tumour.

Before concluding this paper, it may be well to call attention to the great utility of the hemlock plaster in delaying the fatal event of the case, securing as it did a respite of eight hours for the unfortunate patient; the vast importance which might in some instances attach to even a much shorter time may be very readily imagined. Dr. Norris, to whom I am indebted for very valuable advice and assistance in this and other cases, mentioned to me that it procured a like advantage for a patient of Dr. Peace's, an aneurism for which the common iliac had been tied by Dr. P. having recurred, and ultimately destroying life by opening through the skin.

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the patient himself had noticed any swelling whatever; and it may be that the cough, alluded to as having preceded the appearance of the tumour externally, was a mere symptom, due to a pressure which was relieved as soon as, by the completion of the process now supposed, a new direction was given to the swelling. Much light would be thrown upon a case of this kind by the observation of analogous instances at less advanced periods; but as this one stands by itself, a sort of enigma, a purely argumentative process must be employed in tracing out the successive steps of its development.

[1] On the Structure, Diseases and Injuries of the Bloodvessels. By Edward Crisp. London, 1847.

[2] Op. cit., p. 67. [3] Op. cit., p. 61. [4] Op. cit., p. 89. [5] Op cit., p. 128.

ART. VI.—*Remarks upon the Minute Anatomy of three cases of Cysto-carcinoma, extirpated by* Prof. HENRY H. SMITH, *at the Surgical Clinic of the University of Penna.* By J. J. WOODWARD, M. D., of Phila., Assistant to the Surgical Clinic. Read before the Biological Department of the Academy of Natural Sciences of Philadelphia, May 17, 1858. (With wood-cut.)

THE purpose of this article is to record the minute anatomy of three tumours, closely resembling each other in structure and clinical history. The latter is such as to place them undoubtedly in the category of carcinoma to which they were not supposed to belong prior to their removal. They are described because it is believed that there are certain points of peculiarity in their structure not definitely alluded to in the systematic treatises on malignant diseases. Any suggestions as to doctrinal points arising from so limited a number of cases must needs lack weight; nevertheless certain considerations arising from the careful study of these tumours will be most briefly and modestly submitted.

CASE I. *History.*—M. P., a negro girl, æt. 16, residence Philadelphia. Presented a smooth soft tumour of elliptical form between the right scapula and the spine. The base of the tumour was about eight inches in length, and five in transverse diameter. In height it was between three and four inches. It presented an obscure sense of fluctuation like that often given by adipose tumours; was not painful, and was rapidly increasing in size. The girl had only noticed it within a few weeks. Her general health was good, her form well-developed and somewhat inclined to embonpoint. An exploring needle being introduced gave free exit to a straw-coloured liquid.

The tumour was removed by Prof. Henry H. Smith, Saturday, Dec. 19th, 1857. The wound at first healed rapidly, but the healing process arrested itself towards the end of the second week, the lower margin of the wound remaining open.

About four weeks after the operation the patient began to experience considerable pain in the right lung with a distressing cough, but without fever, and rude respiration could be detected by auscultation. After a short time hemorrhage from the lungs made its appearance, the patient spitting up small quantities of blood from time to time through the day for about two weeks. The pains in the chest now increased, though the cough diminished; the respiration became bronchial on the affected, puerile on the opposite side; she emaciated rapidly and to a great degree, was confined to bed through utter inability to remain in the sitting posture, and though still living as I write, is not expected to survive long.

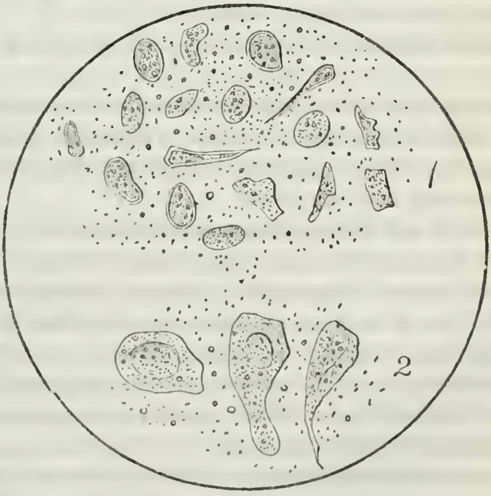
It is believed that these consecutive symptoms are due to secondary formations in the lungs.

Structural Characteristics of the Growth.—The tumour consisted of a fibrous cyst or sac, which was almost entirely filled with a clear transparent liquid of a ruddy straw colour. In the upper part of this cyst a soft pultaceous mass was attached to its inner surface; this mass was also infiltrated through the wall and among the adjacent muscles.

The *cyst wall* at some points was much better developed than at others, and presented in consequence an alveolar arrangement of such a nature as to cause it to resemble much at a little distance the internal surface of the cardiac ventricles. It consisted of a minimum of yellow elastic, with a maximum of white fibrous tissue, embryonic elements being so abundant as to show the wall to be of new formation rather than a condensation of the surrounding areolar tissue.

The *liquid* contained in the cyst coagulated spontaneously on standing, forming a semi-transparent clot which floated on the surface. The presence of fibrin was therefore inferred. The coagulum being removed, the remaining liquid coagulated by heat and also by nitric acid, becoming almost solid. Hence is inferred the presence of a considerable quantity of albumen. Microscopically no form elements were discerned except an extremely limited number of blood-corpuscles.

The *soft pultaceous mass* was composed of granules and of nuclei imbedded in a transparent matrix. These nuclei were identical with those observed in the two following cases, and are represented in the figure. (See cut at 1.)



The majority of them were elliptical or oval, with granular contents, and generally several large fat granules, but no distinct nucleoli. This, however, was not the invariable form; some of them were elongated, some angular, oblong, and irregular. The wall of the nucleus was in some instances thin, in others thick, presenting a well-marked double contour. In diameter they varied from one six-thousandth to one two-thousandth of an inch. Dilute acetic acid exerted no influence upon them. Indeed, a microscopic specimen mounted in dilute acetic acid was preserved without any alteration in the appearance of the nuclei for several weeks, when putrefaction began to occur. The granules were most of them of fat coated with a thin film of albumen.

Case II. *History.*—J. C., æt. 76, mariner, of temperate habits, robust health, and great muscular development, residence Philadelphia. Presented in the right axilla a smooth soft tumour of natural colour about the size of the head of a child four years of age, which kept the arm at a right angle from the body. It possessed a deceptive sense of fluctuation, and had appeared about five months previously, gradually attaining its present size. It was attributed by the patient to a strain while pumping. The exploring needle gave exit freely to a blood-tinted fluid. Prof. Henry H. Smith extirpated this tumour at the University clinic, Wednesday, Oct. 23, 1856, the patient being in a state of anæsthesia. The wound, which was of great size, healed rapidly, and he was dismissed apparently well. The only peculiarity of the convalescence was a degree of delirium (mental aberration, perhaps I should say) totally disproportioned to the febrile reaction, which was quite moderate.

About three months after the operation, the patient returned, presenting several nodulated tumours in the cicatrix, which run rapidly the course of medullary cancer, exhibiting increase of bulk, congestion, sloughing, and hemorrhage, and terminated fatally March 3d, 1857.

Certain peculiarities are to be recorded in the progress of the secondary affection.

Mental aberration has been already mentioned in connection with the treatment of the original tumour. It became a prominent symptom after the development of the consecutive growths, occurring at frequent intervals, with periods of clear mind, until the close.

Pain which had not been a prominent symptom in the primary growth, became so after the secondary masses had attained considerable size; for some time it was only rendered supportable by the use of anodynes, and was accompanied with loss of ordinary sensation, and of motion in the arm; but after sloughing had progressed to such an extent as to relieve greatly the tension of the parts, it diminished and entirely disappeared several weeks before death. As the pain diminished, muscular power returned in the limb to a certain extent, but the sensation was never restored.

The group of constitutional symptoms collectively described as the *cancerous cachexia*, did not appear in a marked manner in this case. The patient retained his muscular development and appearance of health to the close; only becoming enfeebled and anæmic a few days before death in consequence of the excessive hemorrhage, which seemed to be the proximate cause of the fatal termination.

Structural Characteristics of the Growth.—The primary tumour consisted of a huge cyst or sac of fibrous tissue, containing a large quantity, say a pint and a half of a thick grumous and bloody liquid. Soft pultaceous masses adhered everywhere to the internal surface of the cyst, and at points were infiltrated through its wall and invaded irregularly the surrounding tissues.

Microscopic examination showed that the cyst-wall was composed of white fibrous mingled with yellow elastic tissue, with embryonic elements in such abundance as to prove clearly that it was to a great extent a new formation, and not a mere condensation of the areolar tissue of the axilla.

The pultaceous masses were composed entirely of granules and nuclei precisely similar to those described in connection with Case I.

The grumous bloody liquid contained similar nuclei and abundant blood-corpuscles.

Post-mortem.—A post-mortem examination was made in this case. Nothing abnormal was observed except the secondary growths above alluded to. They were of great size, but did not invade the thoracic cavity. The lungs, liver, heart, kidneys, mesenteric and bronchial glands, and intestines, were sound. Examination of the brain was not permitted.

On microscopic examination of the secondary growths it was found that they did not present the characters of the original tumour, but were composed of huge nucleated cells of diverse shapes, similar to those described by authors as occurring in most medullary cancers.

A minute description of them, therefore, may be omitted in this place.

CASE III. *History.*—M——, æt. about 40, residence North Carolina, a man of spare but muscular frame, and apparently in good health, presented a smooth firm tumour a little larger than a man's fist, on the back of the left thigh just above the popliteal region. It began to grow three years before, and had been removed by an operation a few months previously, but soon recurred.

On Saturday, Oct. 24, 1857, it was extirpated at the clinic of the University, by Prof. Henry H. Smith, by a tedious dissection, during which the sciatic nerve was exposed for about six inches of its length, and the sheath of the vessels laid bare for about two inches, creating a deep wide wound. Nevertheless, the convalescence was favourable, and in spite of an attack of erysipelas he completely recovered, neither sensation nor motion being impaired. About six weeks after the operation he returned home. Shortly afterwards the tumour began to reappear in the upper part of the cicatrix, and, as has since been learned, rapidly pursued the usual course of medullary cancer. The patient died, April, 1858.

Structural Characteristics.—This tumour, mention of which will be found in the proceedings of the Philadelphia Pathological Society, pp. 8, was composed of a cyst similar in appearance and in structure to those above described. The whole cyst being, however, completely filled with a soft brain-like pultaceous mass, which was infiltrated through the cyst wall at various points, and invaded irregularly the surrounding textures.

The pultaceous mass was composed of nuclei similar to those described in former cases, *intermingled with which were a few cells containing similar nuclei, and presenting the characters of the cells usually found in carcinoma* (see cut, fig. 2).

Observations.—I have not recorded the above cases chronologically, because it has seemed to me that in the order in which I have placed them, they write a consecutive history; and that in fact the last case presents morphologically a type of what the first and second would probably have become, had not extirpation interfered with their development.

To be brief, I cannot but regard the fluid found in the cyst in Case I., as the blastema of cancer, and the pultaceous mass of nuclei as in progress of development from it; had this development proceeded to a greater degree, with an increased nuclear formation we should have had a diminished quantity (proportionally) of blastema, and in this blastema perhaps abundant free nuclei would have been found floating, all which indeed occurred in Case II., where a greater age had been attained by the morbid growth.

In its ultimate development, undoubtedly, the formation of nuclei from the blastema would have reached a point at which the nuclear formation would be the whole content of the cyst, the blastema being reduced to a simple connective bond or matrix between the nuclei, some of which would have attained to cell development. Conditions which we find fulfilled in Case III., which is of the greatest standing.

Perhaps, also, had not extirpation interfered here, yet more of the nuclei would have attained the condition of cells, as happened in the secondary growths in Case II.

Undoubtedly these cases present certain characters in which they differ from ordinary cancer formation. These points are, evidently, the presence of a distinct sac or cyst limiting to a certain extent the primary exudation of blastema, the unusual *quantity* of blastema, and the tardy development of nuclei from the blastema, and of cells from the nuclei.

Nevertheless, if the views presented above of the development of the growths in Cases II. and III. be correct, all these peculiarities, except the presence of the cyst, are rather modifications as to *time* than as to *manner*, and any deductions which may be hereafter drawn from these cases in connection with others will therefore have a fair bearing on future views of the history of malignant epigeneses.

I am unprepared to call attention to any general fact to be drawn from the study of these cases; but would merely mention, at present, certain probabilities which would seem to arise with regard to the nature of the blastema of malignant growths.

The cancer blastema being seldom exuded in such quantities as to permit its being studied in an isolated condition, special importance is to be attached to the rare cases in which this condition occurs.

The cancer blastema, it would appear from Case I., is not a mere albuminous solution, as has been so frequently asserted, but contains also *fibrin;* resembling in this respect the liquor sanguinis on the one hand, and plastic exudations (inflammatory lymph), on the other.

If this should prove to be true of the cancer blastema as a rule, we may, it appears, infer the negative of the doctrine of Rokitansky, that the cancerous diathesis is essentially an *albuminosis* (Rokitansky's *Path. Anat.*, Phila. edit., 1855, vol. i. p. 298); a doctrine based wholly on the supposition that the cancer blastema is purely albuminous. On the other hand, if this blastema be constituted as above hinted, it would give additional confirmation to the doctrine of Carl Wedl, derived from morphological considerations, and expressed concisely in the following words: "The fundamental character of cancer is that of a malformed (aborted) and degenerating new formation of connective tissue." (*Rudiments of Pathological Histology*, by Carl Wedl, M. D., translation of the Sydenham Society, pp. 610.)

Art. VII.—*Contributions to the Pathology of Disease of the Encephalon.* By Frederic D. Lente, M. D., Surgeon to the West Point Foundry.

Softening of the Brain; Hemiplegia; Partial recovery; Apoplexy; Death. —D. B , aged 58, schoolmaster. This patient has enjoyed fair health during life except in one particular. For twenty years past he has suffered from headache, and for a number of years this has been his almost constant attendant, scarcely ever being absent more than a day at a time, sometimes very severe, and generally so at the end of the week after attending to his duties at the school. He is slightly below the medium stature, spare habit, no peculiar conformation of head or neck, pleasant countenance, and cheerful disposition.

In May, 1857, patient first consulted me in reference to a deafness, which was becoming more annoying, and also mentioned incidentally his headache, which he had come to regard as an inevitable companion of his existence. Finding nothing abnormal about his external *meatus or membrana tympani*, I regarded the deafness in connection with the obstinate cephalalgia, as a symptom of graver trouble within the cranium, and advised a course of iodide of potassium, with counter-irritation behind the ears, and in case of no relief, a seton in the nape of the neck. A few weeks after this, in the month of June, I was summoned hastily to Mr. B., and found him at the house of a friend, lying on a bed on his back completely hemiplegic on the *left side*, very restless, and making constant efforts to turn himself over towards the paralyzed side;

pupils natural, and acting under the stimulus of light; eyes closed; pulse rather feeble. When addressed very loudly, he would answer correctly by monosyllables, but it required some effort to get an answer. Nothing was done except to apply sinapisms to each lower extremity, which seemed rather cool, and to enjoin as perfect rest as possible. The manner of his attack was this: He was conversing with a friend, and the conversation had been of a rather exciting nature. He was about taking his leave, having risen to his feet for that purpose, when he reeled, and fell to the floor in the state in which he was found by me a few minutes after. Without going over the tedious details of a case extending over several months, I will state, in as few words as possible, the subsequent history up to the period of the death and autopsy.

In the first place, it was ascertained that, about a year ago, and for the first time, the patient experienced a slight symptom of paralysis of the left side, which soon disappeared without giving rise to any serious apprehension. A week previous to his present attack, he experienced in the school-room a sensation on the left side similar to the first, which subsided as before. For a week or two subsequent to his last seizure, patient remained drowsy and restless, it being necessary to keep some one by him constantly to prevent him turning himself out of bed, always towards the paralyzed side. He was conscious all the time, but never spoke unless spoken to in a loud tone. The only treatment during this time was a mercurial cathartic and stimulating enema, which had a good effect. Subsequently he became more quiet, his intellect cleared up gradually, and eventually he would converse as freely as ever, being naturally loquacious. But his conversation indicated some weakening of the mental powers, though his memory seemed unimpaired, except, perhaps, in reference to recent events. There was during all this time complete abolition both of sensation and motion on the left side. The tongue was at first protruded in a marked degree towards the left side, but after some weeks this ceased to be the case; it then protruded in a straight line. The *buccinator muscle* was also completely paralyzed, so that it was difficult for the patient to retain his food between his teeth on the left side. After the lapse of four or five weeks patient gained some power of sensation and motion in the lower extremity; this continued gradually but very slowly for about two months, at the end of which time he could, with great exertion, move about the room with the aid of crutches. For some weeks after his attack he was almost free from headache, but it subsequently troubled him to some extent, though not to compare with its former violence. During all that time he had been kept on supporting treatment, with frequent cathartics and enemata, on account of torpidity of the bowels.

In July, he had a sudden seizure, characterized by insensibility, convulsive movements of the *right* arm and leg, and of the muscles of the neck, excessive jactitation, stertorous breathing, moaning, &c., but no regular spasms, or frothing at the mouth, or twitching of the facial muscles. Pulse rather weak. A stimulating enema, head shaved, bladder of ice, and, subsequently, a blister to back of neck, and afterwards, as the headache continued troublesome, to the vertex. He gradually recovered from this attack, and within a week was apparently as well as before. From this date until his death, he had four seizures, at intervals of five or six weeks, generally. The two succeeding that just described were similar, except that the pulse was hard and bounding, and the head more congested. It was deemed prudent to cup the temples, and about seven ounces of blood were taken. In both cases, the restlessness was not immediately subdued by the cupping, but subsided permanently after the inhalation of chloric ether. After each of these attacks, he seemed to gain the power of the paralyzed limb more rapidly. There was also some rigidity of the knees and elbow-joints complained of. At this time there was œdema of the hand and foot, but, for some time prior to death, this disappeared.

On the 6th of March, 1858, after having been unusually well for some weeks, patient had a regular apoplectic seizure, which developed itself rather slowly. He did not lose his consciousness for more than an hour after being stricken down, and the paralysis of the *right* side, which eventually became complete, was only partial at first. He could raise his leg when first seen by me, and feebly grasp the hand. He complained, when requested to describe his sensations, of headache, and of a burning and pricking sensation in the right side. The pulse was full and bounding. Pupils inactive; constant nausea and vomiting. He died comatose in a few hours.

During his first attack, patient was seen by Dr. John Green, of New York; afterward, during the progress of the case, by Drs. J. B. Reynolds, Joseph Bluxome, and Geo. S. Hardaway, late House-Physicians of Bellevue Hospital.

Autopsy twenty-one hours after death.—Body in a cold room, thermometer ranging but little above zero. Examined only the head. Membranes healthy; some opalescent subarachnoid serous effusion. Convolutions at vertex slightly flattened. Upon removing the brain, about three ounces of bloody serum were noticed at the base; upon inverting it, two clots were seen—one anterior to, and one posterior to, the *pons Varolii.* The substance of the hemispheres appeared healthy. No abnormal amount of serum in the lateral ventricles. On the *right* side, in cutting down towards the *corpus striatum,* a little to the outside of the ventricle, the knife encountered a tolerably firm resisting tissue. This was found to be the induration surrounding a cavity with collapsed walls, involving the posterior portion of the *corpus striatum,* and, to a moderate extent, the adjacent hemisphere. This cavity was large enough to admit a walnut, was lined by a dense, resisting, false membrane, and contained a small amount of the peculiar chocolate-coloured, gelatinous matter, resulting from changes in a former apoplectic clot. The remaining tissue of the *corpus striatum* was healthy, except a small cavity in its substance like the larger. The left *corpus striatum* healthy, except a very small cavity similar to those just described. Both *thalami* healthy. The clots noticed at the base of the brain proved to be continuous with each other through the *iter a tertio ad* *quartum ventriculum,* which was greatly dilated, as was also the fourth ventricle, which was many times larger than natural from distension by the clot, which had not, however, injured the texture of the cerebellum, but had completely destroyed the *crura cerebelli* so as to separate the lesser from the greater brain. The *pons Varolii* was broken down and disorganized throughout its upper half.

A portion of the right hemisphere forming the wall of the recent apoplectic cavity, placed under the microscope by Dr. Hardaway, exhibited abundance of atheromatous deposits in its vessels. The semifluid substance contained in the old cavity, under the microscope, exhibited only confused granular matter with one or two atheromatous masses. A few vessels in adjacent portions of brain apparently healthy, exhibited no atheroma.

Softening of the Brain, characterized by very Obscure Symptoms, Terminating in Sudden Effusion of Serum and Death.—Louis Rossmann, 45, Germany. After working in the ice for some days in January, 1858, patient was attacked with a chill followed by fever; he continued to have regular paroxysms of this kind, and of the tertian type for some days, but they were checked by quinine and other antiperiodics. Patient did not regain his strength, however, and in a week or ten days the paroxysms recurred. He continued to go on in this way until about the middle of March, when, after having been able to go about with considerable difficulty on account of gradually increasing debility, he took to his bed and seldom again left it. At this time his paroxysms had lost their periodicity, and he had no well marked chills, though he often experienced chilly sensations, which were followed after an uncertain period by febrile excitement and increase of headache, which had troubled him more or less from the beginning. The tongue had been and continued to be coated with a thick yellowish fur, and he frequently vomited during his paroxysms a greenish fluid, though his nausea was never excessive or long continued, and he generally retained what his appetite prompted him to eat. He also complained at this time of pains in his limbs and indeed all over his body. Up to this time he had been under the treatment of my assistant, Dr. Joseph Bluxome, late of Bellevue Hospital, and subsequently under that of his successor, Dr. G. S. Hardaway. Sometimes, under the influence of anti-bilious remedies and tonics, patient seemed to revive for a day or two and feel better, but he continued gradually to grow weaker, and complain more of headache and nausea and general uneasiness until about ten days before death, when his attendant noticed a slight convulsion, as she called it, affecting the *left* side of the body. It speedily passed off, and when Dr. H. saw him soon after, there was no sign of paralysis. Up to this time there had been no special symptom to point to the brain as the seat of his difficulty, although the idea of cerebral disease had suggested itself to the mind of the doctor for some time previous to this, on account of the persistence of the symptoms and the impossibility of referring the cause to disease of any other organ. Patient's consciousness was always perfect, his memory fair, his pupils active, and the headache, until within a short time previous to his death, not more severe than might be accounted for by the condition of his gastro-hepatic apparatus. His appetite was also as good as could have been expected, and he drank a moderate allowance of beer every day. About thirty-six hours before death, which occurred on the 16th of May, he was attacked rather suddenly with hemiplegia of the *right* side, preceded for some hours by total unconsciousness, the pupils all the time natural.

Autopsy.—The friends could not be induced to permit an examination until about twenty-four hours after death, and then only of the head. It was conducted by Dr. Hardaway. Upon removing the calvarium, nothing special was noticed about the membranes or surface of the brain. Upon slicing off the hemisphere, the bloody points in the *centrum ovale* were perhaps more numerous than normal. The moment the left ventricle was reached there was a sudden gush of clear serum, which, when received in the calvarium the only vessel at hand, was estimated at about five ounces at least. In flowing away, as it did with some force on first opening the ventricle, it was observed to carry along with it abundant shreds of softened white cerebral matter, and these proved to be the softened *corpus callosum*, which was affected in this extreme degree throughout almost its whole extent. In the posterior corner of this ventricle was a consistent mass of gelatinous pus which perhaps amounted to three-fourths of a drachm. The right, which contained no abnormal amount of serum, also contained in its posterior cornu a similar mass, but less in quantity. All other portions of the brain appeared healthy, and the parts adjacent to the *corpus callosum* appeared little if any more softened than would be apt to occur from *post-mortem* changes. A portion of the basilar artery examined under the microscope showed no signs of disease; but abundant atheromatous deposits were observed in the vessels of the cerebral substance taken from different parts of the brain.

Slight Injury of the Head followed by a Slow and Insidious Development of Subacute Meningitis, and Death.—M. C., aged 14, female. Was called to this patient on the 17th of February, 1858. She has generally enjoyed good health until the last five or six weeks, during which time she has been gradually failing, has lost her appetite, is dull and spiritless, frequently troubled with nausea and vomiting, complains of dull headache and debility; she has also fever coming on at irregular intervals, about twice in the twenty-four hours. Is not drowsy. Within the last few days, the vomiting and debility have become the most prominent symptoms, and she is unable to retain any food on the stomach. Bowels rather constipated. Has not kept her bed. Pulse very feeble, but not frequent; skin hot and dry; tongue inclined to dryness; she has constant headache, but it is never very severe. Intellect quite clear. It was difficult to make out a clear diagnosis, but as the fever assumed something of a remittent type, and tonics seemed indicated, quinine was ordered, in conjunction with small doses of calomel, after endeavouring to quiet the irritability of the stomach by various sedatives; also brandy in small quantity. The nausea and vomiting continued to be prominent symptoms for some days, but finally yielded to a blister over the epigastrium. After a time, the bowels became very much relaxed, the evacuations being dark, fluid, and offensive; the diarrhœa was checked by mild anodynes. After several days' attendance, during which the patient's condition seemed to be growing gradually worse, I was informed that, about five weeks before I was called, patient had fallen and struck her forehead violently against a stone door-step, producing a wound just over the left eyebrow, the cicatrix of which is very evident. It had not previously occurred to the mother that this had any connection with her daughter's illness. From a few days after this occurrence her decline in health may be dated. A blister was now applied to the back of the neck, but patient continued slowly to sink, and became more drowsy, but retained her mental faculties to the day of her death, which was on the 26th February.

Autopsy fourteen hours after death.—Head only allowed to be examined. I was assisted by Dr. Bluxome. Upon removing the *calvarium* and *dura mater*, which had a normal appearance, the vessels of the *pia mater* were noticed to be considerably injected; there was also a layer of turbid serum beneath the arachnoid, and covering the whole surface of the hemispheres, and somewhat flattening the convolutions. There was also from two to three ounces of serum at the base, and rather more fluid in the lateral ventricles than in a normal state. There was no fracture of the skull, and no disease of the substance of the brain.

The following cases do not strictly come under the heading of this article, but they occurred about the same time with the above cases, and may not prove uninteresting in connection with them.

Paralysis of Portio-dura, with Slight Hemiplegia.—Mrs. J——, full habit, usually in the enjoyment of good health, aged about 50, married. Was called to her Oct. 2d, 1857, and found her complaining of "numbness" of right side of face, and entire inability to close the right upper eyelid. Says that about two weeks ago she had some headache, attended by "flashes of heat" and "snapping" of the left eye, with slight numbness of the left arm. These sensations on the left side of the face soon passed over to the right; says she could distinctly feel the numbness passing over across the nose to the right side, where it has since remained; her tongue has also been affected from the first, and the sense of taste annulled; when she protrudes the tongue, it is turned considerably to the left, the mouth is drawn very much to the left, and especially when talking; the whole right side of the face is devoid of feeling. There is some slight pain on pressure behind the right ear, no headache, feels tolerably well; there is now very little numbness in the left arm; thinks the trouble is gradually passing off. Says she has been "bilious" for two or three weeks. As the bowels were rather constipated, ordered fifteen grains of calomel to be taken immediately.

Oct. 3. Much better; can half close the eyelid, and protrudes the tongue in almost a straight line. Says she felt decidedly better soon after taking the powder, and has more taste than she has had since her attack. Medicine has acted freely; applied cantharidal collodion freely to the right mastoid process, and saw no more of my patient for some weeks, at the end of which time, found that her unpleasant symptoms had entirely subsided.

I may briefly remark, concerning this case, that according to Dr. Todd, it is very rare to have paralysis of the portio-dura in connection with hemiplegia, or with actual cerebral disease. That there is cerebral disease in this patient I have very little doubt from the nature of the symptoms, and it will doubtless be proved at some future time. It is possible that the disease may be situated near the origin of this nerve, and thus have occasioned a temporary paralysis. Case 14 in Dr. Todd's work is somewhat similar.

Paralysis of Portio-dura from Rheumatic Periostitis.—Mrs. H——, aged about 48, very stout and plethoric, and generally in the enjoyment of robust health. Was called to her December 3d, 1857, and found her complaining of severe neuralgic pains affecting the right side of the face and right occipital region, especially about the mastoid region and over the right eye; the pain over the mastoid is much aggravated by pressure; there is also complete paralysis of sensation and motion of all the parts supplied by the right portio-dura. She cannot close the upper eyelid in the slightest degree; the mouth is drawn distinctly to the left side even when not speaking, and when she attempts to corrugate the brow, the right side of the forehead is perfectly smooth to a little beyond the median line; the tongue when protruded does not deviate; the taste is unimpaired; when she drinks the fluid has a tendency to run out of the right corner of the mouth; has had the occipital pain for two weeks, but the paralysis only a few days; has had no gastric derangement, tongue clear, bowels regular; has not been exposed to any draught, or to unusual cold; has had no syphilitic disease; some time ago had rheumatism in one of her shoulders.

Ordered hydr. sub. mur. ℈j statim; to have leeches to right mastoid region, followed by emplas. cantharid.

Dec. 4. Leech-bites bled freely. The pain on pressure and the neuralgic pains have almost entirely disappeared. The mercurial acted freely. Can close the eyelid to a considerable extent, and the mouth is not drawn quite as much.

7*th.* Rather better; paralysis less marked; has occasional neuralgic pains about the mastoid region. ℞.—Potassii iodid. gr. v, ter die.

14*th.* Improving. Cont. med.

20*th.* Paralysis scarcely noticeable.

May 10, 1858. Patient recovered completely from her attack, and continued well until about three weeks ago, when she was attacked with severe rheumatic inflammation of the right knee-joint. She has just recovered from this last attack.

The following notes are furnished me by Dr. Geo. S. Hardaway, late Resident Physician of Bellevue Hospital:—

Cancer of the Sella Turcica and Brain, producing Apoplexy. Death and Autopsy.—J. H., æt. 35, a native of Ireland, of medium stature and muscular frame, was admitted into Bellevue Hospital under my care, in service of Dr. Alonzo Clark, January 8, 1858.

He gave no account of previous disease, and was not emaciated, but he had rather an anxious expression of countenance. He complained of some pain in the joints and slight cough, but on examination no disease was discovered, and he was not put under treatment.

On the morning of the 11th, he was eating breakfast as usual, but after taking a few mouthfuls he seemed somewhat confused and leaned his head forward on the table. He then got up, went to the water closet, had a very copious evacuation from his bowels, and fell insensible.

When seen an hour afterwards he was paralyzed on both sides, and was totally insensible. The right pupil was larger than the left; pulse slow and full; respiration not stertorous except when his head was turned to one side.

He remained in this condition, except that his pulse became frequent, until the 13th, at 5 P. M., when he died of exhaustion.

Autopsy twenty hours after death.—Body had lain in a cold room since death. Rigor mortis well marked.

Head.—Brain convolutions flattened, some little meningitis, and a good deal of congestion.

The sella turcica was the seat of soft cancerous disease, about one-third of an inch in depth, which had extended to the brain; and the membranes in the vicinity of the disease were thickened by irritation.

At the base of the brain the thickened meninges formed part of the membranes of a cyst which was filled with fluid blood. This cyst was about the size of a walnut, and laid in the crura cerebri, mostly on the left side. The cancerous disease in the brain extended nowhere beyond half an inch from the cyst.

Other organs healthy.

Dr. Clark thought that the mind was not affected in this case, and that the patient appeared totally insensible because all voluntary motion was destroyed, and of course, therefore, all power of giving any evidence of mind. For muscular motion is the only means we have of giving expression to thought.

Art. VIII.—*Amputation at the Shoulder-joint of a Gangrenous Arm; the Gangrene having spread to and attacked the Trunk before Amputation.* By J. F. Hammond, M. D., Ass. Surg. U. S. A.

The 5th of October, 1857, at 10 o'clock A. M., I was called to see Mr. H. H. Whaley. He is a man of medium size, æt. 39, sanguine temperament, strictly temperate habits; a native of New York, for sixteen years a resident of the District of Columbia; for the last three years he has resided in San Diego, California, engaged at his trade—saddlery. Fifty hours before I saw him he received in the lower part of the left arm an incised wound by a knife. A bystander, who was called to render him assistance at the time of the occurrence, has given me in writing, signed by himself, the following history of the case, to the time I was called to it, for publication :—

"*Oct.* 3, 1857. I was called to see Mr. Whaley, who was stabbed with a knife a few minutes before. I found him bleeding freely from an extensive incised wound, which involved all the muscles and vessels in front of the lower end of the left arm, and opened the elbow-joint. Chloroform was administered, and each end of the brachial artery was tied, and two of the veins on the superior part of the wound, besides a small branch of an artery on the outside of the arm. The wound was brought together by seven interrupted stitches and adhesive plaster, and lint was wet in cold water and placed on it, and a roller bandage applied, covering the upper fourth of the forearm, and the lower fourth of the arm. A tourniquet was applied to the arm, the pad resting over the artery, and tightened sufficiently to arrest partially the circulation through the artery. The arm was placed on a pillow by his side, and the whole limb inclined upward for the purpose of impeding still further the circulation. Thirty drops of laudanum were given him immediately; ten grains of calomel and eight grains of jalap were ordered to be given him in the evening. The dose of the laudanum was to be repeated in case of restlessness or spasms. It was not necessary to repeat it. The total loss of blood was, probably, six pints.

"*4th.* He went to sleep after he took the laudanum, and slept well all night. I gave him two ounces of castor oil at 8 A. M. He had one or two operations from the powders of the night before. The oil gave him a thorough clearing out. He took every two hours during the day, a pill containing half a grain of pulverized opium, and half a grain of sugar of lead. Venous hemorrhage was moderate, not more than usual in such cases. He was quiet all day, sleeping most of the time. No appetite. He took a little tea and toast. The tourniquet was loosened the next day, so that the circulation was free to the ligature, and orders were given to tighten it in case of increase of hemorrhage. The forearm was considerably discoloured, but there was no appearance of gangrene. No pain of the forearm except on moving it. The sensation was perfect when touched. Not swollen of any consequence.

"*5th,* 8 A. M. The whole arm much swollen to the tourniquet."

I found the patient with a roller bandage encircling the limb from the upper third of the forearm to the middle of the arm. It was saturated with blood. A tourniquet was around the arm at the insertion of the deltoid muscle. The entire limb below the tourniquet was livid, studded with phlyctæna, distended so as to give the lower edge of the tourniquet the appearance of being deeply imbedded in the tissues. It was cold, insensible, and the pulse could not be distinguished. The lividness on the internal aspect of the arm extended upon the chest, but there was no swelling nor other discoloration discovered at the time above the tourniquet. His pulse was rapid and small, and he was much inclined to doze.

The tourniquet was immediately unscrewed and removed. And after a short delay the swelling was found to have spread to the shoulder, and dark rays were shooting over it generally. It was determined to amputate at once. Several officers and other gentlemen were present at the operation, and I was assisted by Dr. Hoffmann and the hospital steward. The patient was left recumbent; chloroform was employed, which narcotized him until his breathing was stertorous. In less than two minutes the hemorrhage was controlled by pressure on the subclavian artery. The arm was removed at the shoulder-joint by penetrating within the posterior margin of the axilla to the extremity of the acromion process and cutting the posterior flap, then carrying the elbow on to the front of the chest, disarticulating the head of the humerus, passing the knife behind it and carefully cutting the anterior flap necessarily very short. The loss of blood was four or five ounces.

The integument of the anterior flap was in a state of sphacelation, and black, for two cubic inches along its margin, and much of the incised surface of the flap was in the same state, and the pectoralis muscles seemed to be extensively involved by gangrene. The muscles of the posterior flap were gangrenous, though apparently in a less degree. The flaps were brought together by means of stitches and adhesive strips; a strip of lint, wet with water, was placed on the wound, and the whole covered with a single layer of thin muslin. He went to sleep immediately. The following are the meteorological observations for that day:—

	Barometer.	Thermometer.	Hygrometer.
7 A. M., ...	30.000	64° F.	63° F.
2 P. M., ...	30.020	74	60
9 P. M., ...	30.030	60	56

	Wind.	Force of Wind.	Weather.
7 A. M., ...	S. E.	1	Cloudy.
2 P. M., ...	W.	2	Cloudy.
9 P. M., ...	W.	2	Cloudy.

I was called away to visit another patient, and left Whaley in the care of Dr. Hoffmann, until the 7th Oct., 6 P. M. At this period his expression was good; voice strong; ideas clear; tongue furred, white; pulse small, 98 per minute; inclined to doze; has had but one evacuation of the bowels since the amputation; much annoyed by sensation of pain of the amputated arm; some tumidness of the stump; crepitation on pressure over a space two inches square, on upper, outer part of pectoralis muscles. The mortification of the flap not extended, and the spread of the gangrene under the integuments of the shoulder apparently arrested. A flannel saturated with oleum terebinthinæ was placed so as to cover the upper part of the left side of the chest and the stump, and the latter was left simply comfortable; ten grains of ammoniæ carbonas to be given every four to six hours, in case his pulse becomes more feeble; beef tea, quietness and rest.

8*th,* 10 A. M. He slept well. His whole expression much better; tongue beginning to clear; some appetite; pulse 102, full; crepitation diminished; stump comfortable, less tumid. Cleansed the stump without removing the adhesive strips. Dressed with ol. terebinth. ℞.—Ammo. carb. gr. v; vinum album f℥j.—M. To be taken every four hours p. r. n. Enema of warm water and soap at 5 P. M. unless he should have an operation before that time. 9 P. M. pulse 102; he feels very comfortable; the enema caused an operation.

9*th,* A. M. Expression good; pulse 90; skin moist; he feels very comfortable; tongue clearing; he has appetite. Removed the adhesive strips. The line of demarcation on the posterior flap has formed two inches from the margin. Thin, sanious discharge from the wound. The crepitation over the pectoralis muscles much smaller, and not increased in extent. Warm water dressing with pulverized cinchona; quiniæ sulphas gr. j, to be taken every six hours; enema at 5 P. M. if necessary; strong beef tea.

9 P. M. Pulse 98; very comfortable; the enema caused a copious evacuation.

10*th,* A. M. He appears more feeble; pulse 102; very comfortable; slept well; tongue less furred; felt cold in the night and asked for a stimulant; he had a rigor at 9 A. M., which continued for half an hour. Discharge of pus more free; crepitation over pectoralis muscles gone, but the part seems distended with gas. Continue the dressing; quiniæ sul. gr. ij every six hours, and tinctura ferri chloridi gtt. x every six hours, three hours after the quinine; enema; beef broth; ripe fruits. A key was prepared, and the nurses instructed to apply it over the subclavian in case of secondary hemorrhage. Quietness and rest.

9 P. M. Pulse 100, less full.

11*th,* A. M. Pulse 90; slept well; tongue clean; some appetite; headache; less tumidness of stump; the slough commencing to detach itself; pus discharges more freely. Continue the same except five drops of the tincture of iron.

9 P. M. Pulse 104, full. He feels well. Appetite excellent.

12*th,* A. M. Pulse 96, a little tense; he says he feels better than he has since the amputation. Rested comfortably during the night, but slept very little; pulse much excited during the night; stump comfortable; bilious discharge from the bowels in the morning. He has much appetite; the sloughs are separating; the healthy margin of flap tumid and red, not painful. Continue the same except one grain of the quinine and all of the tincture of iron. Exclude visitors. Rest.

9 P. M. Pulse 88; very comfortable; a little restless; morphia sulphas gr. ⅛, at 10 o'clock.

13*th*, A. M. Pulse 94 at 4 o'clock; 102 at 8; and 102 at 10 A. M. He took quinine at 4 A. M. Slept very well; has an excellent appetite; sanious pus discharging freely; the stump appears well. Continue the dressing and the enema. ℞.—Quiniæ s. gr. j; extractum conii gr. ss. M., at 8 P. M., and 4 A. M.; the quinine alone at midday. Broth, and one quail. Fruit.

9 P. M. Pulse 90; he is very comfortable; appetite good; discharge from the stump very free and of better appearance.

14*th*, A. M. Pulse 96; slept well; he says he never felt better in his life; appetite excellent; discharge from stump free and healthy; slough detaching itself very slowly in a mass; the gaseous distension over the pectoralis muscles entirely absent; removed three stitches from the upper part of wound. The detachment of the slough is not hastened, in order to afford more time for the consolidation of the artery. Continue the same in every respect.

15*th*, A. M. Clipped the ligatures to prevent their being carried away by the slough should it become completely detached. Continue all; chicken soup; a leg of boiled chicken; birds.

19*th*, A. M. Pulse 102; removed some of the outer portion of the mass of slough by means of the scissors; two ligatures came away; appetite good; suppuration free and healthy. Continue the same, omitting the morning dose of the extract of conium.

8 P. M. Pulse 102; 9 P. M., pulse 116; 10¼ P. M., pulse 108; appetite very good. No change of treatment.

20*th*, 5 A. M. Pulse 104; comfortable; 10½ A. M., pulse 102; 12 M., pulse 108; some pain of head; appetite excellent; discharge from stump free; continue the dressing; discontinue the quinine and conium, and the fruit; tinct. ferri chloridi gtt. x, to be taken every eight hours. Enema, broth, game.

21*st*. Pulse 102; doing well; continue all.

22*d*. Pulse 96; continue the same.

23*d*. The last ligature came away; it was from the axillary artery, which appeared to have sloughed some distance above the ligature.

24*th*. The whole slough from the anterior flap came away.

25*th*. Much of the slough of the posterior flap was removed by the scissors.

27*th*. Removed by means of the scissors much of the projecting part of the slough of all the muscles of the shoulder included in the posterior flap. He is a little restless after the operation.

31*st*. The last of the slough came away; the deltoid muscle sloughed up to its origin from the acromion process.

Nov. 2. The wound is contracting rapidly.

25*th.* He first elevated himself from the horizontal position; his shoulders supported by pillows.

28*th.* He first sat up unsupported in bed.

29*th.* He first sat up in a chair.

Dec. 8. He left the house for the first time to-day; and a day or two afterwards he resumed his business.

The following is a summary of the meteorological observations during the months of October and November:—

1857.	BAROMETER.			THERMOMETER.				HYGROMETER.			
Month.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	Daily mean.	7 A. M.	2 P. M.	9 P. M.	Daily mean.
October	29.990	29.999	29.999	54.90	74.00	60.64	63.16	52.42	61.61	57.00	57.00
November	30.055	30.061	30.050	50.63	65.43	55.17	57.06	48.63	57.70	51.87	52.73

	The greatest and least temperature at any time.		The greatest and least daily mean temperature.		The greatest and least daily range.		The greatest and least monthly range.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
October	86°	46	76	57	35	7	40	1
November	72	40	65	50	30	7	42	3

	WEATHER.		RAIN.	WIND.
	Days fair.	Days cloudy.	Inches.	Prevailing.
October	19	12	0.64	E. W. and S. W.
November	16	14	2.25	E. W. and S. W.

This case is interesting only as one in which recovery took place, when the amputation was performed through the gangrenous parts in a spreading gangrene which had attacked the trunk before the operation. It seems injudicious to amputate under such circumstances, but the patient must soon have died from the gangrene, and the operation could not bring about a worse result. To his excellent constitution and habits, to the chloroform which saved his nervous system from the shock, and to his rigid continuance in a horizontal position and quietness, is the result due.

MISSION OF SAN DIEGO, CALIFORNIA, *March 4th*, 1858.

Art. IX.—*Stricture of the Urethra, Treatment of, by Syme's Operation of Perineal Section.* By Wm. S. Halsey, M. D., Professor of Surgery in the Philadelphia College of Medicine.

George J., æt. 27, has had a stricture of the urethra for five years. He attributes the cause to his having contracted several years ago a gonorrhœa, which he treated himself by the use of astringent injections. The first real difficulty he ever experienced from it was a retention of urine in consequence of riding a long time in the cold. This occurred nearly four years ago. His stream of urine now became quite small, and he experienced great pain and difficulty in evacuating his bladder. The desire to urinate became very frequent and urgent, particularly at night. Finding these symptoms to increase upon him, he applied to a surgeon, and was treated by the introduction of bougies. This failed to afford him any permanent relief. Suffering occasionally with complete retention of urine, he came under the treatment of several different physicians, all of whom attempted to cure him by the process of dilatation. Nothing seemed to benefit him. Becoming worse, he applied to one of the colleges of this city for treatment. This was about three years ago. He underwent treatment here for two months. During this time he was attacked with a complete retention of urine, which was relieved by opening the bladder through the perineum. All attempts at dilatation, he says, failed, the smallest sized cat-gut bougie, after many trials, being the only instrument that it was possible to carry through the stricture. The treatment by dilatation proving inefficient, the stricture was divided internally, and a full sized catheter carried into the bladder. This gave him great relief for a time, but in three months afterwards the stricture had become as close as ever, and his sufferings quite as great as at any time previous. Abscesses now formed one after another, and burst in the perineum. Two remained open and formed fistulas, through which a considerable portion of his urine was discharged. Occasionally these would close, and his urine pass tolerably free per urethram, giving him ease for weeks at a time. Again his stricture would close and the fistulas break open, and as the passage of urine through these artificial openings gave him exquisite pain, his sufferings at these times were perfectly agonizing. Thus his condition alternated from that of the most terrible agony, to that of comparative ease and comfort, until August, '57, when I was called to see him. His condition was now truly deplorable. The urine that passed by the urethra was in a small broken stream, or in drops, while a great portion was discharged by the fistulas. At every attempt to urinate his scrotum filled and became distended with urine. The scrotum was three or four times its usual size, and the skin very much thickened and indurated. An abscess was pointing just posterior to it and on the left, which I opened, and from which escaped pus and urine. Upon examination I found two strictures, one about five inches from the meatus in the spongy portion, and the other about an inch posterior to this one, situated in the bulb. This latter was very tight, indurated, and exceedingly irritable. It was only after daily attempts for a week that I finally succeeded in passing a No. 1 gutta percha bougie into the bladder. This gave him great relief.

When I first saw him, and became acquainted with the history of the case, I was fully persuaded that nothing short of the external division of the stricture would give him perfect relief. I therefore advised the operation strongly. But as the introduction into the bladder of this small instrument rendered him so much more comfortable than he had been for some time previous, he was very anxious that the attempts at dilatation should be continued and the operation postponed. This temporary success, I confess, somewhat elated my hopes that a cure might be made by dilatation, and I determined to give this means a thorough trial. The stricture, however, was so irritable as to cause him to scream out with the pain whenever I attempted to carry this small instrument into the bladder, even when done in the gentlest manner. After nearly two months of the most assiduous treatment, giving him liq. potassa and tinct. opii internally, and starch and laudanum injections per rectum frequently to allay the great irritability, and the almost daily introduction of the bougie, the stricture became so much dilated as to admit a No. 3 bougie of the English size. On account of inability to see him, the introduction of instruments was omitted for one day only. An attempt was made the day after to pass a No. 3 silver bougie, the one that was last used, but it utterly failed. A No. 2 gutta percha was next tried—this met with the same fate. The No. 1 gutta percha was now used, only to meet with a failure also. A hot hip-bath was now ordered to be taken immediately, and to be followed by fomentations of flannel cloths wrung out of hot water, and to be constantly applied to the perineum; also a purge of senna and salts, to be taken at night. The next day, after a long time of trial, which was really more than an hour, the No. 1 bougie was introduced into the bladder.

The excessive irritability still continued to be as great as ever, or if there was any difference I think it was now greater than before. I attempted to lessen this by the application of caustic. I applied it in this manner: charging a catheter-syringe with five drops of a solution of argent. nit. ʒij to the ℥j of water, I carried the instrument down to the stricture and injected the solution. This caused a good deal of pain at the time, although the irritability was much relieved; not enough, however, to expect that any great benefit was to be derived from its continued application; besides, on account of the distress it gave him, he begged to have it omitted for the future. All further attempts to dilate the stricture proved perfectly futile. I succeeded again in introducing a No. 2 bougie, but this is the largest size that could be carried through. He has been using this instrument up to the time of the operation. For the two weeks previous to the operation, he has been suffering severely with chills and febrile symptoms.

Nov. 16. Was attacked with a severe inflammation of the scrotum, which was treated with leeches and hot fomentations. Suppuration ensued, and the abscess burst, and was discharged from one of the old fistulas. The scrotum still continues to fill up at every attempt to urinate; even the integument of the penis has become very œdematous. The urine continues to flow partly by the fistulas, which are now three in number, and partly by the urethra; the pain is also quite as great. In fact, his condition is nowise improved, but much worse.

At every attempt to introduce a larger instrument than the No. 2, a severe chill follows, and occurs in paroxysms daily for three or four days in succession. This has occurred more than once.

The patient is becoming weaker. He has not been out of his room for more than a month. He maintains the recumbent position nearly the whole time. His appetite is also failing, although he has been taking iron and quinine for several days. It is quite certain that something more must be done, or he will die of exhaustion. *Dilatation* has failed entirely to afford the necessary relief, and certain it is that to pursue it further is not only useless but injurious, for each attempt to introduce a larger sized bougie than the one that is now daily used is followed by a severe ague, which is kept up in paroxysms for several days. *Division* of the stricture *internally* has been tried and failed; besides, as this operation accomplishes only a partial division of the stricture, the same hardened cartilaginous and resilient condition is still left, and the parts are apt to resume soon again their former diseased state. This I believe is the experience of those who have heretofore strongly advocated this operation, and given it a thorough trial. There remain then but two methods of procedure—one, the treatment by caustic—the other, external division of the stricture. The former, in some cases may prove very beneficial, especially where the stricture is short and requires but a few applications of the caustic to pass the stricture, but I doubt whether it can ever be *used with safety* in a long and close stricture, and where more than one exist. It is then quite evident that external division alone remains as a last resort, and is the only method of treatment which offers any hopes of producing a cure. The patient himself now being satisfied that all else was useless, became anxious to have this operation done. At my request my friend Dr. R. P. Thomas saw the case with me, and strongly advised the immediate performance of the external division of the stricture.

19*th.* Being assisted by Drs. Thomas, Hanly, Hazzard, and Messrs. Crawley and Cooper—medical students—and the patient having been etherized, a Syme's new staff was introduced through the stricture. This staff consists of a steel instrument, the shaft of which is nine inches in length, and of the size of a No. 9 bougie, while the curved part is only the size of a No. 1 bougie, and is grooved on the convex surface. The small part of the instrument is passed through the stricture, and thus serves as a guide, upon which the whole of it is divided with safety, when the bistoury has once entered its groove. The junction of the small with the large part of the instrument constitutes a shoulder, which rests upon the stricture, and which serves to inform the operator whether the whole of it has been divided, by the ability to pass the large part through the strictured portion. Having entered the small part of the staff through the stricture, and feeling the shoulder resting upon it, I made an incision, beginning at the posterior edge of the scrotum upon the raphé, and carried it downwards one and a half inch to within three-fourths of an inch from the anus. The tissues were exceedingly indurated, having a feeling of hardness similar to that of cartilage. So great has been the inflammatory exudation in the parts, that it was necessary to cut fully one inch and a quarter if not an inch and a half in depth before the staff could be reached. Having at length reached this instrument and introduced the knife into the groove, I carried it upwards under the scrotum, dividing the stricture subcutaneously for the extent of an inch, then backwards and downwards until I had divided all the hardened tissues under my finger. The staff was now removed, and a No. 9 catheter introduced readily into the bladder. The hemorrhage was inconsiderable, probably not an ounce was lost. The patient was now placed in bed on his back, and advised not to change his position for the next forty-eight hours on any account. The knees were flexed and a pillow placed under them. Water-dressing was ordered to be applied to the wound. The catheter was left in the bladder forty-eight hours and then removed. No unfavourable symptoms occurred during this time, the patient passing his water with perfect ease and comfort, partly by the catheter and partly by the wound.

27*th.* Had been doing well until yesterday, when he complained that nearly all his urine passed by the wound, which before was nearly half discharged by the urethra. I introduced the same No. 9 catheter, and left it in during the night. He now complains of a severe pain in both groins and scrotum. There is a good deal of tenderness on pressure, and redness existing here also; thirty leeches were ordered, and to be followed by hot fomentations. These gave great relief. The penis is now much swollen also.

Dec. 1. The inflammation and swelling in the groin, scrotum and penis, have subsided to a great extent, and the patient is very comfortable. He now passes more than half his urine by the wound, which seems to be healing very slowly.

15*th.* Patient says he feels very comfortable, and would be perfectly well were it not that the wound is not entirely healed. The wound is now closing more rapidly than before. About two-thirds of the urine passes by the urethra.

Jan. 1, 1858. The wound is now nearly healed, an opening only existing the size of a small pin-hole, through which is discharged from one to two teaspoonfuls of urine at every evacuation of the bladder.

22*d*. The wound is now entirely healed. For the last four or five weeks the quantity of urine that flowed by the perineal opening has varied but very little, until about three days previous to the closure, when it began to diminish and then ceased altogether.

J. is now perfectly well, and says he passes as large a stream of urine as he ever did, and with as much freedom and comfort.

During the whole time of the after-treatment, the introduction of a good sized bougie has never been omitted longer than four or five days.

It is worthy of mention, that in passing the largest bougie into the bladder no sign of obstruction, hardness, or even of roughness can be detected that would indicate that a stricture ever existed there before, but, on the contrary, the same softness and elasticity exist in the former strictured portion of the urethra that there are in any portion which was always free from disease.

The facts which are developed and are especially worthy of notice in this particular case, are—

1st. The exceedingly great irritability of the stricture, the amount of constitutional irritation that was produced in the form of agues whenever an attempt at dilatation was made beyond a certain extent, and especially the persistency to a return of all the grave symptoms after repeated, lengthened, and the most thorough trials to remove the disease by the methods in ordinary use had been made.

2d. That not only had repeated and the most thorough attempts to perform a cure by *dilatation* been made by several different surgeons, with an entire want of success in every instance, but even the stricture had been *divided internally*. And although a temporary relief was afforded by it, yet it failed entirely to make a permanent cure.

3d. Although it is contended by some surgeons, that a stricture through which can be passed a bougie can be cured by dilatation, this case certainly does prove, if anything at all is proved by it, that there are strictures that cannot be cured by this method alone.

4th. That since every other approved method of treatment had been tried in vain, it is fair to infer that this case is one of that class of strictures of which the talented author of the operation says, the only hopes of a permanent cure remain in the operation of perineal section.

5th. That those which are very irritable, old, hard, callous and like cartilage, and which have the surrounding parts for a considerable extent affected in a like manner, are the ones to which this operation is especially adapted. The reason of which is, that the induration must be melted down entirely before a perfect restoration to a normal condition can take place. This is accomplished by external division through the process of suppuration and granulation, which has the effect to break down the hardened and callous substance which composes the stricture, and to replace it with a new, soft and pliable tissue, that has not the great tendency to contract and produce a return of the malady.

6th. That dilatation and incision do not thus melt down this large extent of diseased structure, but act upon it only partially, thus leaving the rest to reproduce the coarctation by its natural tendency to contract.

7th. That Mr. Syme's operation of perineal section (for this is a very different affair from the old method of dividing stricture externally) is not the "difficult," "murderous," and "ever uncalled-for" operation that it is represented to be by those who have endeavoured to cast obloquy upon it and to consign it to an unmerited desuetude.

Two days ago, I had the satisfaction of seeing J. He informs me that his stream of urine continues to be large and full, and that his health is now perfect. He says he continues to pass a large bougie into his bladder every two or three weeks.

Philadelphia, *May* 17, 1858.

Art. X.—*Report of a Case in which Two Ounces of Arsenic were taken into the Stomach without proving fatal.* By W. C. Jackson, M. D., of Montgomery, Ala.

The subject of this report was a young man, D. M., from Charleston, S. C., aged 28 years, to whom I was called March 23d. I saw him at 1 o'clock P. M., one hour after he had taken the first portion, and ten or fifteen minutes after having taken the last (he having taken the poison at three different intervals). He did not complain; pulse a little excited. Ordered zinci sulph. gr. xx; which he at first refused to take, but after some persuasion consented. Ordered ferri oxidum hydratum to be prepared and ferri subcarb. ℥ij to be taken immediately after free emesis. 2 o'clock. Slight emesis, with some traces of the arsenic. Gave subcarbonate of iron, followed by albuminous drinks. I did not see patient again until 3 o'clock; had in the mean time thrown up some three or four drachms of arsenic in mass, and the subcarbonate had been repeated several times. Repeated the sulphate of zinc, and followed it with mustard and water, which produced considerable effort and vomiting; when the stomach was emptied of its fluid contents, gave the hydrated sesquioxide of iron ℥ij, to be repeated every hour with albuminous drinks in the intervals. 6 o'clock. Great irritability of stomach, and patient says he feels a burning sensation in stomach and throat; another mass of the poison ejected, as much as six or eight drachms. The irritability of stomach continued until 11 o'clock, after which time patient rested well. The hydrated sesquioxide of iron was then discontinued.

March 24. 7 o'clock A. M. Patient feels very well; but says that he has some fulness about head and dimness of vision. Some congestion of the capillary circulation about the face; no pain or thirst; tongue natural; pulse 90. 11 o'clock. Pulse 88; still no pain except slight headache; bowels not been moved. Ordered enema, which produced several large fecal actions from the bowels; says he feels weak and sick at stomach. 10 o'clock P. M. Pulse 80; doing very well; gave morph. sulph. gr. ¼ in mucilage for a cough that patient says he has had for several days.

25*th*. 8 o'clock A. M. Had a good night; pulse 80; tongue a little furred, but moist; no thirst; gave milk and lime-water and continued mucilaginous drinks. 5 o'clock P. M. Patient says he feels as well as he ever did; sitting up; bowels not moved since last evening; repeated enema with desirable effect.

26*th*. 8 o'clock A. M. Sitting up, and says he feels perfectly well; condition as when last seen; pulse down to 75; dismissed with a caution as to diet, &c.

The young man, the subject of this report, was under arrest at the time, and was in the custody of an officer of the law when he purchased the arsenic, and took the first two portions in his presence and the presence of another gentleman; at this time, a small quantity was taken from the paper and tested. The remainder was taken in the prison in the presence of several persons.

If this were not sufficient evidence to establish the fact, the large quantities thrown up in the presence of a number of witnesses, and the last (about six or eight drachms) which was thoroughly tested, would. From what I saw, and from the statements of those connected with this case, I am satisfied that the patient took all of two ounces, except the small amount left in the paper, which was tested also, as alluded to above.

This case I consider of great interest in a toxicological view, not only from the quantity taken, two ounces, but from the greater part of the arsenic remaining in the stomach six hours; the freedom from pain, the absence of all inflammation of stomach and bowels, and the complete recovery without any bad effects whatever, for the patient is now walking about, and says he feels perfectly well, and has felt so since he was dismissed two weeks ago. The arsenic was taken with a suicidal intent at three different intervals of ten or fifteen minutes each. The first and second portions were taken in a glass of wine, the remainder in water, and not being soluble, or but slightly so, the mass was scraped from the vessels in which it had been placed and swallowed. The patient had taken no food that day, consequently, we would have supposed that the poison would have been the more readily absorbed; and then, too, a large part of it remaining in the stomach six hours would induce us to expect inflammation from its irritant properties, yet we find the patient free from thirst and pain, and no traces of inflammatory action exhibited themselves during the entire treatment.

The necessary delay in the preparation of the hydrated sesquioxide of iron induced us to substitute the subcarbonate, as being more nearly allied in its chemical constitution to the hydrated sesquioxide of iron.

The mass last thrown up was subjected to the different tests, and proved beyond a doubt that the poison was arsenic.

Art. XI.—*Spontaneous Cure of Artificial Anus after the Operation for Strangulated Femoral Hernia.* By D. Leasure, M.D., of New Castle, Penna.

On Monday, the 6th of July, 1857, at eight o'clock in the morning, I was called to Mrs. C——, aged 46, of feeble health and delicate constitution, labouring under strangulated femoral hernia of the right side. The hernia had been of two years' standing, and frequently protruded, but the patient was always able to reduce it by lying upon her back, and manipulating in the usual manner. She had never worn a truss. On the Saturday preceding my visit, while attending to some of the more laborious household duties, she felt her rupture enlarge, but paid no attention to it till at bedtime, when she undertook its reduction as formerly, but failed to accomplish it. She let it alone till morning (Sunday), when, after repeated failures to reduce it, vomiting and severe pain set in, which continued during the day. A homœopathic practitioner, living next door, was called in, who used the ordinary *remedies* in such cases made and provided by that school for "obstinate vomiting," but without any very marked effect. Some allowance may be made, however, in this instance, as neither the lady nor her attendant friends informed the medical man of the existence of "a lump in the groin" till late at night, when he at once laid a lump of ice upon it, with directions to keep it and others there till morning. Morning came, and as the patient seemed rather worse, the doctor advised that the case be passed over to me, and withdrew.

I found her, on my arrival, in the condition usually existing in similar instances—severe pain, obstinate vomiting, constipation, and hiccough. The "lump in the groin" was so badly frozen with the ice which still lay upon it, that I was obliged to gradually permit a return to the natural temperature, before I dared to manipulate it. By four o'clock P.M., I thought it safe to make attempts at reduction. In the mean time, I had put her under the influence of full doses of morphia, with the effect of allaying the pain, and arresting the incessant vomiting, and the patient expressed herself as feeling easy and comfortable. After half an hour of very careful manipulating, I found no impression had been made upon the tumour, and as I had a most painful phlegmon on my right hand, I obtained the assistance of my friend, Dr. S. M. Hamilton, who, after a long time, say three-quarters of an hour of steady, firm pressure, succeeded, as we both thought, in reducing it. There was no gurgling or sudden subsidence of the tumour, but it seemed as though the protruded bowel had gradually returned into the abdomen. The tumour had entirely disappeared. The patient was left feeling greatly relieved, and she rested well until the following evening, when, during a fit of coughing, the tumour returned, and with it the pain and vomiting. I attempted its reduction, but failed, after repeated efforts. Dr. Hamilton was absent, and I again put her upon the use of full doses of morphia, with warm fomentations to the hernia; and at midnight attempted the reduction, and failed. There being no urgent symptoms, I left her till morning, and returned, and during the forenoon made repeated long-continued and persistent efforts at reduction, all to no purpose. Still, as there were no urgent symptoms to render an operation imperative, I delayed till the moment should arrive when further delay would be criminal. At two o'clock in the afternoon, I received a telegraphic dispatch, calling me to the bedside of a friend some hundred miles distant, supposed to be dying from retention of urine. Accordingly, I placed my patient under the care of one of my professional friends, with instructions to *coax* the case, but by no means to attempt violent measures of reduction till my return, and at the same time left instructions to send in Dr. Hamilton, also a surgeon, as soon as he should return home. This was on Wednesday afternoon. I returned on Thursday morning, to find her apparently moribund. She vomited constantly, and the ejections were stercoraceous, and foully offensive. She had violent convulsive hiccough, was cold and clammy, with sunken eyes, pulseless wrist, and wandering intellect. The tumour was doughy, and cold, and purple.

My friend, with whom I had left her in charge, informed me that he had done his *best* to reduce the hernia, and I have no doubt of it, but like myself, he had failed, and he felt disinclined towards an operation at that late hour. I immediately stated to the patient's husband the desperate, forlorn hope of an operation, and the formation of an artificial anus, as being still in store, and consent was cheerfully given; and assisted by my friends Drs. J. S. Cosset and J. H. M. Peebles (Dr. Hamilton still being absent), I put her under the influence of ether, and proceeded to operate. On making the usual oblique-topped T incision through the integuments, which were discoloured, but not gangrenous, and exposing the sac, it was found to be entirely gangrenous, and pulled to pieces, in attempting to deflect it from the bowel beneath, which presented a knuckle about the size of an ordinary almond. There was no omentum in the sac, and the surface of the intestine, though altogether chocolate-coloured, was still possessed of the ordinary peritoneal polish. There were numerous and firm adhesions of the lower surface of the bowel to the sac, which was not gangrenous at that part.

I found a stricture at the crural sheath, which I divided, and on passing the finger up to the edge of the crural arch, I found there a stricture also, which nipped the bowel very tightly, making quite an indentation with its sharp edge. I divided this also, and now the question presented itself, what should

I do with the bowel? It was adherent to the posterior surface of the sac, it was badly nipped, though not hopelessly disorganized, and, to all appearance, the patient was "past praying for." I broke up the adhesions carefully, and returned the strangulated portion of intestine *entirely within* the cavity, in the hope that if the patient survived, the natural warmth and moisture of the parts would favour a return of full vitality to the partially gangrenous bowel, and if artificial anus should ensue, the angle formed in the gut would be more obtuse, and the spur, or eperon, might not be so long or acute as to interfere with spontaneous healing, and the integrity of the bowel, without an operation. The returned portion of intestine was left entirely within the abdomen, but in contact with the crural opening. A compress and bandages were applied, and the patient put to bed, and a half a tumbler of brandy administered. She immediately rallied, and, on the following morning, took a light breakfast, with manifest relish. I gave no medicine of any kind whatever, but left the case entirely to nature. There was no motion of the bowels, nor any discharge from the wound, until the *fourth day*, when a thin watery discharge took place from the latter; and on the sixth day, the contents of the bowels escaped freely from the orifice, establishing an artificial anus. This continued to discharge, and the lower portion of the bowel remained *entirely inactive*, until, at the end of the fourth week, there was a natural stool per anum, without the administration of either laxative or enema, and the character of the dejection did not differ in appearance from an ordinary passage in health. The opening in the groin was kept closed by a slight compress and bandage, and the patient sat or walked about the house with ease and comfort, except when there would be a slight discharge from the artificial opening, consisting, in part, of the contents of the bowel, till, at the end of the tenth week after the operation, the wound entirely closed, and the patient's health is quite as good as previous to the operation. She wears a soft, hollow, padded truss, more as a measure of precaution than any absolute necessity. In this operation, the lateness of its performance, and its seeming hopelessness, make it one of interest, while the breaking up of the adhesions, and return of the strangulated intestine *entirely within* the cavity of the abdomen, but in apposition with the femoral opening, may not be deemed altogether an orthodox method of forming artificial anus. Nor, indeed, do I either justify or recommend it to others, but simply state it fairly, as one instance of its kind, to take its place in the statistics of the history and surgery of hernia.

ART. XII.—*Case of Hæmatocele.* By JOHN H. PACKARD, M. D.

NOTWITHSTANDING the voluminous writings on surgical subjects which have been presented to the profession, cases are constantly met with in practice, differing in some way from all published descriptions, so that their diagnosis, prognosis, and treatment may either or all of them become matters of doubt and perplexity. These difficulties do not necessarily imply unusual complications; a case may be puzzling from its very simplicity, or rather from the absence of phenomena commonly observed in its analogues; and it will readily be seen that the rarer any form of disease, the more apt will it be to deviate from the so-called standard.

The case which the above remarks are designed to introduce, was one of pure hæmatocele; which is of very rare occurrence except as the result of injury from without.

J. M., æt. 40, a shop-keeper, applied to me Feb. 19, 1858, to be treated for a very great enlargement of the scrotum and its contents on the right side. The skin was very red, tense and firm; the part somewhat painful on pressure; the swelling extended towards the left side beyond the raphé of the scrotum, pushing before it the apparently healthy left testicle. The skin along the course of the cord was a little puffy; the testicle could be plainly felt at the posterior part of the swelling, which was entirely destitute of translucency.

He said that the right side of his scrotum had always been somewhat larger than the other, but not more than he thought it ought to be; that it had never given him the slightest uneasiness until five days before; and that at that time he was sitting on a bench in the open air, when he felt a sudden pain in the part, which then began to swell. No trace of gonorrhœa could be detected; and I was led to think that the case was one of hydrocele, with sudden increase of the effusion, and inflammation of the investing tissues. He was purged, dieted, and ordered to remain in bed (which he did not do). Lead-water and laudanum were applied locally. Next day the dressing was changed to a bread-and-milk poultice; and this was continued throughout.

March 4. The swelling of the skin, fascia, &c., was much reduced; fluctuation very distinct. Adopting the diagnosis above mentioned, I introduced a trocar and canula; but only about f℥ss of blood escaped, and no pressure could induce any further emptying of the sac, into the cavity of which the instrument had evidently passed; the latter moved freely in every direction when pushed in a distance of full two inches; it was withdrawn, and the poultice reapplied.

No irritation of any kind followed this operation, and next day the swelling was freely painted with tincture of iodine, which painting was repeated daily for several days.

12*th*. The trocar and canula were again introduced; this time the canula was kept clear by means of a probe, and about f℥iv of partially coagulated blood was discharged. The parietes of the sac were evidently thickened and roughened; the clots were of various sizes, and quite rough in texture. Under the microscope these clots seemed made up of dense fibrillæ, with an appearance of very abundant but indistinct nuclei. The poultice was reapplied, and next day the sac seemed to have filled up again somewhat.

The swelling gradually grew smaller, but continued very tense.

19*th.* I tapped him again, withdrawing about f℥j of bloody liquid, containing a few small clots. The testicle seemed to me somewhat enlarged, and its envelops a good deal thickened. Directed him to walk about.

An unintermitting decrease in the swelling now ensued, and on April 7, forty-seven days from the commencement of the treatment, and fifty-two from that of the disorder, I could not, by the most careful examination, detect anything abnormal except the thickening and condensation of the tissues investing the gland, before alluded to.

The first peculiarity of this case seems to me to be its mode of origin. The patient had no motive for deceit, and stated repeatedly in the clearest manner, that there had been nothing the matter with him before the time specified; no ecchymosis or mark of contusion was discoverable, and the inflamed state of the skin could be readily accounted for, either by its tension or by its contiguity to the tunica vaginalis. Mr. Curling, whose article on hæmatocele in his work on *Diseases of the Testis* is the fullest I have met with, says, that it generally results from a blow, or from straining on the part of the patient, unless it supervenes upon a hydrocele; in which latter case it may be due to the rupture of a vessel, or to a wound of the testicle or spermatic artery by the trocar, in the operation of tapping. Scarpa's case, alluded to by Mr. C. (Am. ed., p. 184), is given in full in his *Treatise on Hernia*, translated by Wishart; it is an instance of very honourable candour in the confession of a failure. Against the idea of a previously existing hydrocele in the case I have related, are the facts of the denial of the patient, the small amount of serum in the liquid evacuated (not more than should normally correspond to the amount of coagulum), and the inflammation set up, which would hardly have been caused by so small an effusion of serum in the sac as there must have been if there were any at all. If, however, there had been a small hydrocele, we may readily imagine that, perhaps, in moving upon the bench a fold of the tunica vaginalis might have been pinched up, and thus a rupture of some vessel have occurred.

Nélaton[1] speaks of spontaneous hæmatocele as a very rare affection. Erichsen[2] mentions a case of three years' standing; but does not state distinctly that it was not originally a hydrocele. Sir Astley Cooper[3] mentions eight cases of the disease, one of 17 years' duration, ascribed to a blow; the rest were all hydro-hæmatoceles. In 1856, while resident in the Pennsylvania Hospital, I saw a very large tumour, supposed to be a hydrocele with thickened walls, tapped by Dr. Peace; the liquid evacuated was dark red and grumous, and contained abundant crystals of cholesterine. This tumour had been in existence about twenty years; the patient was a man 64 years of age, who had been admitted on account of frost-bite of both feet; he died of general exhaustion about four days after the operation, which was followed by extensive sloughing of the scrotum. Here the diagnosis was very evident; it was a case of hydro-hæmatocele. No other instances than the two now mentioned have come under my notice. Dr. Norris informs me that there have been but very few cases in the Hospital during the last twenty years; they all resulted from violence, and had existed some time; and in one of them very profuse suppuration demanded the free laying open of the sac. If, therefore, the case first related were one of pure and unmixed hæmatocele, it is unique in its recent date and in the absence of violence in its origin.

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[1] Clinical Lectures on Surgery, reported by Atlee, p. 656.

[2] System of Surgery, Am. ed., p. 886.

[3] Structure and Diseases of Testis.

Another singular feature in the case in question is its tractability. Chelius and Sir Astley Cooper advise free incisions; Mr. Curling says, they are sometimes necessary; and all authors agree in the statement that suppuration is apt to ensue. Nélaton discountenances any tapping after the first, alleging that it is very apt to give rise to the formation of troublesome abscesses. Erichsen's case, before alluded to, is said to have recovered very well after tapping.

I would here call attention to the fact that the swelling passed over to the left of the raphé of the scrotum, thus showing plainly that it was due to effusion into the cavity of the tunica vaginalis; for this would not have occurred had the injury been confined to the tissues outside of that sac, and the concomitant symptoms were not sufficiently severe to warrant any suspicion of the testicle alone being concerned. In tuberculous or malignant affections, or in any others which give rise to adhesion between the gland and the skin, the raphé itself would be displaced one way or the other.

It was before stated that the tunica vaginalis was very evidently thickened and roughened; the same is mentioned by Sir A. Cooper as having been observed by him in several cases. M. Gosselin has published a very interesting memoir,[1] illustrated by seven cases, upon this thickening of the tunica vaginalis in hydrocele and hæmatocele. He ascribes it to the formation of false membranes, which may be either thin and well-organized, or thick and bark-like; they are connected with the subjacent membrane by loose and easily-detachable cellular tissue, are often apparently fibrous or fibro-cartilaginous in texture, and may even become the seat of calcareous deposits. He has reference, however, to old-standing cases; in the one I have given, the thickening was probably in the first place from coagulated blood, and was rendered permanent by the coagula so deposited becoming organized, and adherent first to the surface of the serous sac and then to one another; the sac being converted into a thick membrane without any central cavity, much as in the radical cure of an ordinary hydrocele.

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[1] Arch. Gén. de Méd., Sept., 1851, *et seq.*

Art. XIII.—*Fracture of the Skull, with Protrusion of the Brain, and Subsequent Recovery.* By A. W. McDowell, M. D., of Bedminster, Somerset County, New Jersey.

On the 10th of June, about seven o'clock in the evening, I was called to see George M., a lad 17 years of age, who, as I was informed, had received a severe blow from the kick of a horse. On my arrival at the house of the patient, about fifteen minutes after the accident, I found him on a grass-plat in front of the house, where his friends had taken him, thinking the air might revive him. I ordered him to be taken into the house and laid upon a straw bed, and then sent off for a neighbouring physician, for consultation. Upon examination, I found that the skull had been fractured to about the size of a silver dollar, producing decided symptoms of compression of the brain. His body and extremities were cold. His breathing stertorous, his pulse slow and scarcely perceptible. The blood had run quite profusely from the wound before my arrival, and was still flowing. Blood was also discharged in large quantities from the ear of the same side. It seemed to be quite florid, and more of the nature of arterial than venous blood.

The account given of the accident was this: The patient was ungearing the horses from a plough, and while stooping down to unhook the traces, the blow had been given. The persons near heard him cry, and when they arrived, he was perfectly insensible. I gave him a few teaspoonfuls of cold water. After the third or fourth spoonful had been swallowed, sickness of the stomach and vomiting occurred; and while the patient was setting up, for the purpose of vomiting, the brain protruded through the external opening; this took place between 8 and 9 o'clock. About 9 o'clock, the consulting physician arrived. We then examined more minutely. The skull was fractured, as I said before, to about the size of a silver dollar, and by passing a probe, we found the scalp was detached from the bone to the same extent. The bone was depressed more than half an inch, and in the middle was cracked entirely through, corresponding with the external cut, which was about two inches long from before backwards, and about an inch in another direction. At this opening, the brain protruded, and by turning the scalp a little to one side, we could see its pulsations very distinctly for about the extent of an inch; with every beat of the heart, the pulsations were very visible; for one-half of the distance, the membranes had been torn up and lacerated by the rough edges of the broken bone, so that we could distinctly see the brain itself, with its peculiar ash colour; for the other half, the membranes were entire, looking as if the brain was glazed over with the white of an egg. The difference was very perceptible to the naked eye.

After mature deliberation, we determined *not* to use the trephine, as we thought there was but a bare possibility of his recovery, and we thought the operation would rather detract from, than add to his chances. We drew the lips of the wound accurately together, by means of adhesive straps; over this we placed some lint and carded cotton; then a fine linen rag and bandage. I stayed with the patient all night. About two o'clock he began to get gradually warmer, and his pulse began to rise; his breathing was stertorous, and he seemed to be in a sound sleep. About 8 o'clock the next morning, the consulting physician arrived, when we proceeded to undo the bandage. It was saturated with blood, that had run profusely from the ear of the wounded side; the wound itself discharged but little. As the pulse was full and strong, and the indications were to guard against inflammation of the brain, I bled him to the extent of a pint; we then put some fresh cotton and a bandage on, and left him. I saw him about 5 o'clock in the evening; he was then quite restless, picking at the bandage, as if it was too tight, particularly about the throat. There is considerable difficulty of swallowing, and was from the first; his breathing not stertorous; pupils natural; his pulse full and strong. Looked at the wound: there was no discharge. I bled him again, about a pint, and stayed all night. About 12 o'clock, he awoke out of a sound sleep, uttered a loud cry, and placed his hand upon the region of the bladder. I introduced a catheter, with some difficulty, owing to his being so restless, and drew off nearly a quart of urine. He had not made his water previously since his hurt. He was then tranquil until morning.

Saturday morning, 8 o'clock. Pulse nearly natural, the beat a little stronger; no stertorous breathing, difficulty of swallowing still continues; patient evidently more sensible; we give him nothing to eat, and allow him a little milk-whey, sweetened for drink.

Saturday, 5 o'clock. Favourable symptoms continue; made him understand by motions to put out his tongue, which was very heavily coated; got him up on the pot, and he made his water freely.

Sunday morning 8 o'clock. Pulse not quite so good; took the bandage off, but did not disturb the dressing; it looks favourable.

Monday morning. The pulse a little fuller than natural, not enough to require bleeding; gave him a dose of salts and senna, which not operating, used an injection, which operated freely.

Monday, 5 o'clock. He begins to know persons.

Tuesday morning. Knows persons, and endeavours to talk, but finds himself unable; in his efforts, makes a noise like a dumb person, but articulates no sounds; pulse good; tongue cleaning; no pain in the head; difficulty of swallowing gone.

The case continued to go on favourably. On Saturday, the ninth day, he *spoke*, for the *first* time; previous to that, he asked for everything by motions. Up to this time, he has taken no food, only some whey for drink. He has made his water regularly ever since the first time. His pulse is good and regular. There is no discharge from the wound. Complains of no pain in the head. Is a little dizzy when he sets up.

After the ninth day, he began to take a more nourishing diet, and to sit up out of bed; his limbs were at first weak and stiff, particularly his fingers, but by exercise they soon became good.

On the *eighteenth* day after the accident, we removed the dressings. The wound was completely healed up, the bone elevated to its place, and feels sound, and you may press upon it and he feels no pain.

After he began to be around, there was a peculiar numbness in the ends of his fingers; he could not distinguish a rough from a smooth object by the touch of the right fingers. The hurt was on the *left* side, and the fingers on the *right* side were benumbed. This accident happened fifteen years ago. The man has since married, and resides within my practice. He is a stout, healthy man; his mind is clear, and his intellect good; he *never complains* of pain in his head. There is still a slight depression of the bone, but not the least tenderness.

ART. XIV.—*Removal of a large Urethro-vesical Calculus.* By A. REEVES JACKSON, M. D., Stroudsburg, Pa.

MRS. H., aged thirty-three years, the subject of the following case, was attacked, when nine years of age, with a scrofulous disease of the right hip-joint, which produced a partial dislocation of the head of the femur, and a number of fistulous openings about the joint, in the groin, and at other parts of the pelvis. Many of these had continued to discharge pus, of a more or less unhealthy character, up to the present time.

For about twelve years she has been suffering from incontinence of urine, at first slight and occasional, but which, for the past three years, has been constant, the urine dribbling from her in such a manner as to make her a loathsome object to her friends and even to herself. Strange to say, about that time (three years since), notwithstanding her condition, she became married, and the husband informed her medical attendant that he had noticed, soon after marriage, an obstruction in the vagina, and that it had been gradually increasing ever since. For the past two years she has been confined to her bed, suffering very greatly from pain, which she referred principally to the urethra, and for the relief of which she had consumed enormous quantities of laudanum, morphia, &c. The position she assumed was either on her back or left side, with her knees drawn up, and her right hand pressed strongly against the perineum, that posture affording her partial relief from the pain. She had used her hand so much in the way mentioned, that the flexor muscles of the fingers had lost nearly all power of contraction.

She had kept carefully concealed from her physician, Dr. Abraham Levering, of Bozzardville, all knowledge of her condition, and obstinately refused to submit to any examination being made, until her suffering became almost intolerable. She finally consented to a vaginal examination, although the exceedingly sensitive condition of the parts made this very imperfect and unsatisfactory.

Dr. Levering, who kindly furnished me with the foregoing history of the case, now requested a consultation with Dr. Thomas Bond, of Hainesburg, N. J., and myself.

Accordingly, on the 10th of July, 1857, we proceeded together to the house of the patient, and, after putting her under the effect of an anæsthetic mixture of chloroform and sulphuric ether (administered by Dr. Bond), I, at the request of Dr. Levering, introduced the index finger of the left hand into the vagina, and discovered a smooth, hard tumour blocking up the passage so as almost to obliterate it; and it was with very great difficulty indeed that the finger was carried up beyond it. Still keeping the finger in the vagina, I then attempted to pass a silver catheter into the bladder, but at once found the urethra entirely filled and distended with a hard substance, against which the point of the instrument grated harshly. It was now very evident that there was present an urethral concretion of very large size, and it was at once decided to remove it.

By an effort, continued for a few minutes, I succeeded in introducing the index finger into the urethra, and was enabled to carry it partially round the sides of the lower portion of the stone, although at many points it appeared to be adherent by its rough surfaces to the walls of the passage. It was evident, from its great size and its roughness, that it would not be prudent to attempt its removal entire; and I accordingly proceeded to break it up and remove the pieces, with a pair of strong, yet slender, forceps. A syringe filled with tepid water was used occasionally for washing out the smaller particles. This was a slow process, and more than an hour had elapsed before the whole of the concretion was removed.

The neck of the bladder and the portion immediately within were easily explored with the finger, and were found encrusted with calculous matter. A large portion of it was removed, but it was found impossible to get all of it away.

In consequence of the manner in which the stone was removed, it was impossible to ascertain its exact size and weight; but after placing the larger portions together, it was evident to all of us that it had been *nearly twice as large as an ordinary sized hen's egg.* It was composed of the triple phosphates principally, but had a distinct nucleus, apparently central, which consisted of lithic acid.

The patient recovered well from the operation, and was relieved, to a great extent, of her pain; but, as was to be expected, the stillicidium urinæ remained, although in a minor degree. For several days after the operation she passed a large number of small pieces of the calculus, which no doubt had been left in the bladder from the crushing of it, or which had become detached from the mucous surface of that organ.

Dr. Levering informed me that her health continued to improve very greatly until about three months after the operation, when she was seized with an attack of dysentery, an epidemic which was raging at the time, and of which she died.

No autopsy was made.

The chief point of interest in the foregoing case is the very large size of the concretion. The occurrence of urethral calculi in the female is rare, owing to the shortness and dilatability of that passage. Undoubtedly, in this case, the central uric acid nucleus had descended from the bladder into the urethra; and it is difficult to understand why it should not have passed on through that canal, and thus out of the body. The most sensitive part of the urethra is at its vesical orifice, where the sensibility is so great that the presence of even a small calculus occasions very intense pain, usually, and immediate contraction. However, that point once passed, the calculus usually meets with but little or no further obstruction to its exit. In this instance, such clearly has not been the case; and the stone, after entering the urethra, has remained there, and received continual accessions to its size, until, extending into the bladder, it finally formed the mass I have described.

Art. XV.—*Exsection of the Lower Four-fifths of the Radius.* By J. M. Carnochan, Professor of Surgery in the New York Medical College, Surgeon-in-Chief to the State Hospital (New York), etc. (With a wood-cut.)

It might, with apparent reason, be supposed that exsection of the long bones, involving the articular extremities, should be followed by serious impairment of the functions of the corresponding articulations. I have, however, already shown, by the cases I have recorded of exsection of the ulna and of the radius, that the function of the elbow-joint, as well as of the wrist-joint, can be preserved, notwithstanding the entire removal of either of the bones of the forearm. The following case of exsection of the lower four-fifths of the radius has also been attended by a successful result, as regards the preservation of the functions of the radio-carpal joint and the hand.

Catharine Wilson, aged 31, married, a native of Wales, and resident of the United States for the last twelve years, was attacked about five years since with inflammatory rheumatism, from which she suffered severely for about four months, although judiciously treated by her attending physician. Upon the subsidence of the rheumatic attack her general health became tolerably good, but the left arm continued to be subject at times to severe pains, especially about the region of the forearm. In January, 1846, the left hand and arm became severely affected, swelling to twice the size of the sound limb, as high as the humero-scapular articulation. The disease continued unabated, accompanied with severe and excruciating pain, until July following, when signs of suppuration at the lower part of the forearm began to be manifested. The pain now became much less, and the tumefaction of the upper arm subsided; the febrile condition, also, became less; the patient, however, at this time, from the prolonged suffering she had undergone, and the severe treatment to which she had been subjected, presented a strumous appearance, with much debility and emaciation. The local disease had become concentrated upon the forearm, and an abscess, slow in its formation, finally pointed opposite the lower portion of the radius, on the posterior aspect of the arm, about three inches above the styloid process. Another similar point of fluctuation could be distinguished in front of the radius, nearly on the same level. At this stage of the malady, the patient was brought to me for my advice, by Dr. Dougherty, of Brooklyn, on the 15th of March, 1857. The forearm was still generally much swollen, tense, hard, and red, as far as the humero-cubital articulation. A bistoury was passed into the abscess on the dorsal aspect of the arm, and a considerable quantity of pus immediately escaped; a probe passed through the wound struck upon denuded bone, and the nature of the case was plainly revealed. From the general character of the swelling at the lower part of the arm, it was not easy to determine at once whether the ulna was implicated or not; it was finally concluded, however, that the radius alone was diseased from ostitic inflammation and its consequences, and that resection afforded the only chance of recovery. The nature of the disease was explained to the patient, and she readily assented to an operation.

The operation was performed on April 9, 1857, with the assistance of Drs. Casseday, Dougherty, Cummings, Abrahams, Henry and others, mostly in the same manner as had been observed in the case of exsection of the entire radius, which has already been reported. The patient was seated upon a chair beside the operating table, and was easily put under the influence of chloroform. The arm, supported by assistants, was placed so that the ulnar border of the forearm rested firmly upon the edge of the table, in a state of semi-pronation. A longitudinal incision was made in the direction of the radius, on its external anterior border; commencing about two inches below the head of the bone, and extending downwards to a point opposite, and a little behind, the styloid process. Two terminal incisions were then made at the extremities of the first one, extending transversely backwards, about three-quarters of an inch. The bone was laid bare a short distance below its middle, and the dissection carried upwards to within three-quarters of an inch below the bicipital tuberosity, so as to expose the bone on its different aspects; at this part the radius was perfectly sound, and its section was easily affected by means of the chain-saw. The remaining steps of the operation consisted in separating the diseased portion from the soft parts, and in isolating the lower part of the radius from its attachments at the radio-carpal articulation, without injury to the arteries, nerves, or tendons. The humeral artery was compressed, during the dissection, by an assistant; the interosseous artery and a small branch only requiring the ligature. As soon as the oozing of blood had stopped, the tendons of the wrist were arranged in their relative positions, and the lips of the wound were drawn together. The proper dressings were then applied, and the forearm, in a state of pronation, was laid upon a padded splint; secured in that position by slips of a retentive bandage.

Six hours after the operation the patient was seen; she complained of much pain, extending to the axilla; an anodyne draught was ordered.

April 10 (the following day), the patient stated that she had slept well during the night; pulse 120; ordered an anodyne for the night.

11*th.* Had been restless during the night, and complained of pain at the wrist; pulse 125, and feeble; first dressings removed; suppuration had commenced; the upper portion of the wound uniting, however, by first intention; complained of thirst; ordered toast-water and chicken-tea.

12*th.* Patient much easier; pulse 100, and more full. Ordered two grains of sulph. quinæ every two hours, also an anodyne for the night.

13*th.* Pulse 95; dressings removed; suppuration free; wound uniting at the wrist. Ordered ol. ricini; for nourishment, beef-tea, arrowroot, and four ounces of wine.

14*th.* Pulse 85; complains of rheumatic pains along the upper arm and shoulder. Iod. potass. ordered; wound dressed; union progressing.

15*th.* Condition of patient comfortable; pulse 85; appetite improving.

16*th.* Dressings removed; discharge of pus much diminished; the ligatures came away; there has been no undue inflammation about the region of the carpus.

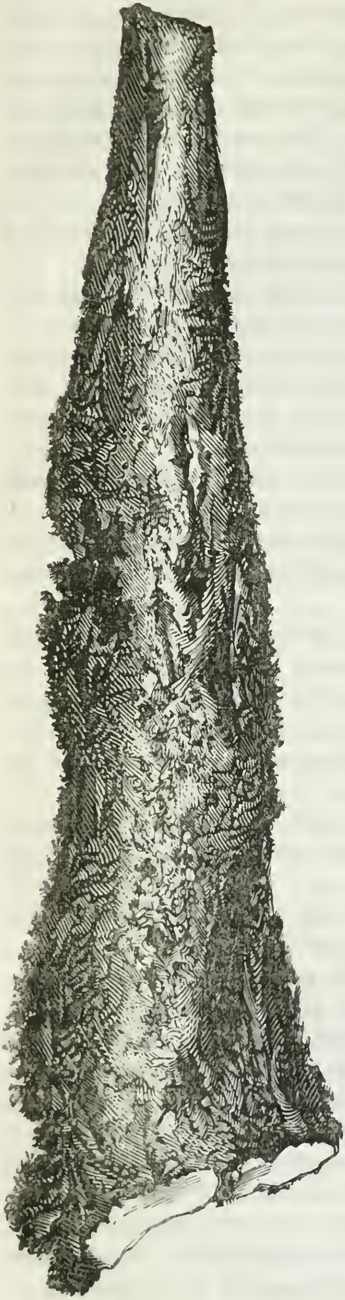
19*th.* Very little discharge from the wound; says that she feels much better than she has done for some years past; sits up and walks about; appetite good; tonic treatment continued.

22*d.* The splints dispensed with, and the arm supported in a sling.

25*th.* Improves daily; the wound nearly healed.

May 14. Six weeks after the operation, the patient is entirely well, and the wound healed, with the exception of a small point at the middle of the arm.

At the beginning of this month (June, 1858), the patient presented herself to me, in order to express her thanks at the result of the operation, and to fulfil a promise, which I had obtained from her, of seeing me again, at the expiration of a year. The radial aspect of the forearm presents the long cicatrix of the incision, and a depression corresponding to the portion of bone removed. The axis of the hand is somewhat changed, the hand being drawn towards the radial side of the arm; and, on the ulnar side of the wrist, the styloid process of the ulna presents a considerable projection. The functions of the hand and its sensibility are not impaired, and the patient informs me that she continues to perform her household duties nearly as well, and with as much facility, as before the operation.



Pathological Condition of the Bone.—The accompanying wood-cut represents the posterior and outer surface of the portion of the bone removed. The specimen exhibits the results of severe inflammatory action of the osseous tissue—expansion of the osseous tissue, ulceration, acicular projections, enlarged foramina with mammillated eminences, eburnation, and cloacæ, leading to dead portions of bone in the interior. The surface preserves the general outline of the bone, but by the increase of bony matter it has been thrown into ridges and tuberosities, partly by the action of the muscles of the forearm.

The anterior aspect of the bone, at its lower part, presents marks of the most intense inflammation; the foramina are enlarged, at one point, and each is surrounded by a "combing" of eburnized bone; this distinctive character is lost as the shaft is gained, but the new bone is comparatively dense on the entire pronator surface.

Posteriorly, the character of the newly formed matter is different; a few foramina present the characteristic manifestation of osseous inflammation, but this surface has generally a worm-eaten appearance, and towards the shaft excavations are seen with smooth surfaces which contained pus. At this part, the destructive effects of inflammation are apparent, and the loss of substance is surrounded by marks of intense inflammatory action. The interior of the bone presents small sequestra of dead bone, and at some points the cancellated structure has suffered from molecular necrosis.

45 Lafayette Place, N. York, *June*, 1858.

TRANSACTIONS OF SOCIETIES.

ART. XVI.—*Summary of the Transactions of the College of Physicians of Philadelphia.*

1858, *March 3d.* *Gangrena Oris.*—Dr. CORSE read the following note of a case of gangrena oris, and exhibited the patient in a convalescent condition. A little mulatto girl, about 9 or 10 years of age, was, without any known exciting cause, taken with inflammation in the left cheek, which gave but little suffering to her, and no uneasiness to the parents. The inside of the cheek had at one point the appearance of what is usually termed, among the non-professional, a canker sore. It was permitted to run on for some days, perhaps as many as eight or ten (the precise time not being remembered), when the cheek began to swell, and presented a reddish appearance externally.

About this time, a small sore spot attracted her attention in the right cheek, very similar to the one which first appeared in the left, and near about the same point, opposite the first molar tooth. The parents now began to be uneasy, and sent for a homœopathist. On examining the case, he ordered her the lowest diet, and placed her under a course of treatment internally, assuring them it was but a small matter, and easily cured. This treatment not having the promised effect, a poultice of some ordinary kind, probably flaxseed, or bread and milk, was locally applied. The child grew worse rapidly, and an irritative fever, which had set up early, became a prominent symptom; the patient got no rest, and delirium now began to manifest itself. These symptoms went on increasing, the family became dissatisfied, and a consultation was held with one of the same class of practitioners. No benefit having been obtained, a second consultation with two homœopathists, and at last a third consultation with three, were attended with a like result. They continued the treatment of low diet, with granules, etc., and poultices to the cheeks. She grew constantly worse, and the parents determined to get a regular physician to see the child, and sent for me. I found the patient sitting up in bed, moaning, with a pulse of 140 to 160 per minute, a poultice to each cheek, and the room filled with a most intolerable fetor.

On removing the poultices, I found both cheeks in a gangrenous state; in some places there was the red line of demarcation drawn, at others the disease was still spreading.

On learning the previous diet, I immediately ordered a few stewed oysters to be given, and a teaspoonful of brandy in a wineglass of milk, to be followed by beef tea. The bowels being costive, I ordered a gentle laxative.

In two hours I returned, and having found the pulse 135 to 145 and stronger, I began to remove the gangrenous portions by dissection. This proceeding was, of course, astonishing to the family, but having given up all hopes of saving the child, they were desirous to have anything done which would benefit. After removing the dead fragments, as far as prudence would permit, I applied solid argent. nitras. to the whole gangrenous surface, where the disease was extending.

The red surfaces, where the slough had separated, were then dressed with cerate, and a pledget of lint saturated with dilute chlorinated soda, was placed in each excavation.

Next morning I learned that the patient had had several tranquil naps, but the destruction was not yet done. The right cheek, which was last taken, was the worst; the inflammation had extended down below the lower jaw, and up to the right eyelid, and the right eye was nearly closed. I made another dissection of the dead tissues from each cheek; the whole rows of teeth above and below were exposed to view, and part of the right malar bone also; the parotid ducts were pouring out their contents externally on each side. By repeated dissections, and vigorous application of the argent. nit., the progress of the disease was at last stopped. My difficulties were somewhat increased by the springing of the facial arteries, which took place during a violent fit of crying, while I was applying the argent. nit.; the blood welled out strongly at first, but was stopped by pressure and styptics.

Having succeeded in changing the gangrenous inflammation into a healthy one, I had only a large sore, and a greatly debilitated condition to treat; these, after a prolonged treatment of tonics and good diet, terminated the case in recovery; with large cicatrices, and some deformity from loss of parts, but with perfect cheeks and a very good mouth.

Abscess contained in an Aneurismal Sac.—Dr. Wood stated that, during the last winter, a case had occurred to him which he thought of sufficient interest to be communicated to the college. A middle aged man entered the Pennsylvania Hospital, with symptoms which indicated phthisis; namely, cough, purulent expectoration, progressive emaciation, frequent pulse, night sweats, &c. No decided evidences, however, of a cavity could be detected. There was slight dulness on percussion beneath the inner extremity of the left clavicle; and on both sides a strong bronchial sound could be heard in respiration. Dr. Wood was under the impression that subcrepitant rales were audible here and there over the chest; but, as he reported the case from memory, he could not be certain on that point. He had no doubt of the existence of tubercles; but there was one peculiarity about the case which distinguished it from others of this kind. The bronchial sound above referred to gave the idea that it came from a particular point of the trachea; being heard about equally on both sides, much increased when the patient drew in his breath forcibly, and sounding very much as the inspiration often sounds in health, when the patient is told to breathe strongly, and contracts the glottis in doing so. The same sound, too, could be heard in some degree, without the chest, upon forcible inspiration. There was not dulness sufficient beneath the clavicle to justify the supposition that there was any extensive consolidation of the lung at the apex. The inference was obvious that the trachea was narrowed at a particular part, either by constriction or pressure; and the idea of aneurism of course occurred to him; but there was not the slightest murmur, no unnatural pulsation over the part suspected, nor in the carotids or subclavians, no thrill in the pulse; and no other evidence whatever of aneurism, except the bronchial or rather tracheal sound above referred to, and the slight dulness on percussion. The patient was put upon cod-liver oil, and the usual treatment for phthisis; and seemed somewhat to improve; but, suddenly, the resident physician was sent for, with the information that he was much worse; and on reaching the ward found him dead.

An examination was made by Dr. Humphreys, the resident physician, aided by Dr. Wells; and the results were reported to Dr. Wood. The parts too concerned in the disease were exhibited to him, though he did not see them in situ. The immediate cause of death was evidently a sudden discharge of pus into the trachea. This was seen filling the larger air-passages, and flowed from the mouth, when the position of the body was changed. It was found to have entered the trachea anteriorly, a little above the bifurcation, by two small nearly contiguous orifices. These communicated with a cavity, which was found collapsed, and the walls of which were continuous with those of an aneurismal tumour, lying between the trachea and the arch of the aorta. They adhered to the outer surface of the trachea, which thus formed, for a small space, a portion of the walls of the cavity, and in this space existed the openings through which the pus had escaped. The bottom of the abscess appeared to be formed by an old very firm coagulum, which adhered all round to the walls of the cavity, so as completely to close it in that direction. The firm coagulum filled almost entirely that portion of the aneurismal sac which had not been occupied by the pus, and presented itself like a plug at the opening in the aorta, which was circular and somewhat less than an inch in diameter. The plug did not in this place adhere completely to the walls of the sac, but allowed a little blood to enter by its side. The entrance, however, and exit of the blood must have been very much impeded; and it is probable that the little which had entered remained quiescent in the movement of the circulation. Hence the absence of any pulsation or murmur, and the want of the aneurismal thrill in the pulse. It appeared to Dr. Wood that the portion of the sac still penetrable might in a little more time have been completely filled with coagulum, and ultimately obliterated; and, had the pus been discharged without suffocation, the part constituting the abscess might also have gradually lessened, and in the end disappeared.

But there was another affection, which, even in the event above referred to, would in all probability have proved fatal. The general symptoms of phthisis had not been deceptive. There was little deposition of tubercle in or near the apex of the lungs, but throughout their whole structure were here and there small tubercles, from the size of a millet-seed to that of a large cherry, many of which were softened, and several filled with the pus-like matter resulting from the disintegration of tubercle. Some, Dr. Wood thought, had opened into the bronchial tubes.

It is a question of some interest, whence the pus proceeded which filled that portion of the sac in contact with the trachea. Was it the result of a change of the blood into pus, or did it proceed from the walls of the cavity? Dr. Wood was informed that the pus was tinged reddish with blood. This may be considered as somewhat in favour of the idea of the conversion referred to. The inner walls of the arteries are not disposed to form pus. But they may have undergone a material change of character; and, besides, the exposed anterior surface of the trachea might have been the seat of the suppuration; and the colour of the pus may have been owing to a portion of the coagulated blood dissolved in it.

Narcotism from the Extract of Hyoscyamus.—Dr. Keating narrated the following case. He was summoned on the 25th of January last, at 3 A. M., to Mrs. A., who had been confined ten days before, and was then convalescing from a severe attack of puerperal fever.

Mrs. A. having been seized with an adynamic form of puerperal fever, had been treated by him with large doses of opium, and had taken, within a period of eight days from her confinement, in different forms, an equivalent to ninety-six grains of opium.

The night of the 15th of January, at 10 P. M., he had prescribed for some nervous symptoms from which she was suffering, an anodyne pill, consisting of five grains of Tilden's extract of hyoscyamus. About 3 o'clock A. M. her husband was startled by the peculiarity of her breathing, and upon examining her more closely, he soon discovered that she was completely insensible.

Dr. K. reached her bedside about 4 o'clock A. M., and found her in a state of complete narcotism. Her pulse was small and rapid, about 150 in the minute; the breathing was 36 in the minute, but not stertorous; body covered with a profuse clammy sweat; the pupils were extremely dilated; there was inability to swallow, and a total unconsciousness. Her husband thought that she had been in this state for about two hours.

The character of the breathing, the condition of the skin, which was of a bright red hue resembling scarlatina, and the character of the pulse, proved most conclusively that her narcotism was not the effect of any of the preparations of opium; especially as she had taken none for twenty-four hours. Her recovery, under the use internally of the aromatic spirits of ammonia and brandy and of external counter-irritation, indicated that her condition was due to the effects of the pill taken the evening previous. The difficulty in swallowing and excessive dilatation of the pupils continued for some time.

Her husband, an experienced druggist, had himself prepared the anodyne pill for her, and only gave three grains of the extract of hyoscyamus, recollecting that some of his medical friends had mentioned to him the powerful effects which they had seen from the employment of that preparation of the extract of hyoscyamus. At Dr. Keating's request, the husband wrote on to Mr. Tilden, sending him some of the drug, and inquiring whether some extract of belladonna had not been commingled with it by mistake. Mr. Tilden positively denied the presence of any belladonna, and declared it a pure extract of hyoscyamus. It was certainly remarkable that narcotism to such a degree should supervene upon the administration of three grains of extract of hyoscyamus, in a patient who had previously borne ninety-six grains of opium without the slightest untoward symptoms, an interval of at least twenty-four hours having elapsed between the administration of the last dose of opium and that of the pill. Whether this latter were hyoscyamus or belladonna, the previous saturation of the patient's system with opiates appears (contrary to recent experience) to have afforded no protection.

Some conversation ensued, in relation to this case, in the course of which Dr. RUSCHENBERGER stated that he had met with a similar instance in the case of a sailor at sea. Dr. R. was accustomed to prescribe four-grain pills of extract of hyoscyamus frequently; and had them prepared in quantities of twenty-four at a time. On one occasion he was called to a man three hours after having ordered him a four-grain pill of extract of hyoscyamus, and found him suffering from delirium, dilated pupil, troubled vision, red skin, and dryness of the fauces. He suspected that extract of belladonna had been substituted, and inquired closely into the matter; but was satisfied by the hospital steward that the pill taken came from among the hyoscyamus pills, and that there was none of the extract of belladonna with which it could have been confounded.

Other Fellows had been in the habit of administering large doses of extract of hyoscyamus, and had never witnessed any serious narcotic effects. The general impression seemed to be that the symptoms described were those of belladonna only, and that, as the extract employed had not been tested by analysis, there must have been more or less extract of belladonna.

April 7th. Case of Craniotomy.—Dr. CORSE read the following: The operation of craniotomy becomes necessary from some disproportion between the size of the fœtal head and the mother's pelvis. The precise measure of this disproportion necessary to justify craniotomy is not determined. One will say that it ought not to be performed unless the disproportion is so great as to render impossible the passage of the head through the pelvis; another will say, that the life of the mother is much more important than that of the child, and any relative size which would endanger the mother's life would justify the operation. Admitting either of these, we shall always want some determinate means of ascertaining when this is the case; and after all it will have to be left to the judgment of the operator, either alone or in consultation.

Much difficulty presents in making this diagnosis, and some errors of opinion have occurred, as proved by the size of the fœtus obtained, for at a subsequent period the patient has been safely delivered of a larger fœtus than the one removed by craniotomy. It is therefore something to have a body of unusual size to *show*, in order to justify your operation, as may be illustrated by the following case.

Mrs. ——, of her fourth pregnancy, was taken in labour on Wednesday afternoon, and during that night the pains were very severe; they abated somewhat on Thursday morning, recurred with violence again on Thursday evening, and continued unabated until Friday morning, when the physician in attendance sent for me. I found the head presenting the anterior fontanelle, seventh position, and very high up, yet forcibly pressed against the brim of the superior strait; the os was undilated although not rigid. I saw no immediate danger, and left the case for the time, but returned several times during the day. Symptoms continued moderate, and the os became fully dilated; in the evening the symptoms became urgent, and as we were of opinion that she could not be delivered without aid, the forceps were applied. After prolonged and unavailing efforts, it was deemed necessary for the safety of the mother to diminish the size of the cranium by evacuating its contents. This being done by the usual means, a fœtus *twenty-four inches long* and *twelve and a half pounds in weight* was delivered; the measurements of the head could not be made out, but the dimensions of the other part of the body will afford us some idea of its size.

I learned from her that her first two deliveries were accomplished by "cutting up the child," to use her own words, but I could not learn whether by embryotomy or craniotomy. The third one was delivered by forceps, but was smaller than this, and dead when delivered.

Subsequent examination showed the pelvis to be deformed in the antero-posterior diameter, which was greatly contracted.

This case is one of large fœtus and small pelvis, combining the two difficulties, either of which usually renders craniotomy necessary. The patient reacted from the operation in a few hours, has since been doing well, and is at the present time living in apparent good health.

Dr. Corse then exhibited the fœtus to the Fellows, and renewed the measurements in their presence.

Melanosis of the Supra-Renal Capsules.—Dr. Levick availed himself of the opportunity to say, that in a case of melanosis reported in the last printed "Transactions of the College," attention is called by him to the condition of the *supra-renal capsules*, the description of which he had accidentally omitted.

Both of these organs were much diseased. That of the left side was torn in its removal, and could not be so accurately examined. That of the right side appeared to be enlarged, but upon close examination it was found that its healthy structure was replaced by soft, pultaceous melanotic matter.

The close relation supposed to exist between disease of the supra-renal capsule and an excess of pigmentary formation in the skin, renders their pathological condition a matter of interest.

In this case, although there was such an excess of this black deposit in nearly all of the internal organs, the skin was entirely free from any unnatural discoloration.

Arsenical Poisoning—Arsenic in Subnitrate of Bismuth.—Dr. Rogers called the attention of the College to a recent case of suspected poisoning with arsenic, the peculiar circumstances of which, as developed in the course of the legal investigation, rendered it unusually interesting in a medico-legal point of view.

The trial was suddenly cut short, and the accused party released, on account of an accidental impurity discovered by him (Dr. Rogers) in the medicine which had been administered by the attending physician of the deceased.

His object was not to discuss the evidence of poisoning in the case, although he had no doubt that, with all the facts elicited at the trial at his command, such a discussion would both be interesting and instructive; he wished to refer only to the point already alluded to as having terminated the prosecution; and, at the same time, to put the Fellows of the College on their guard against an accidental impurity of a common remedy, which had been hitherto unsuspected, viz., the presence of *arsenic acid in the subnitrate of bismuth.*

Dr. Rogers was unable, from his own knowledge, to detail the history of the case from the beginning. His connection with the investigation dated only from the time when the stomach and intestines were brought to him, carefully separated from other parts of the body, and for chemical analysis *alone.*

The examination was conducted exclusively for arsenic, since that substance was known to have been procured by the accused; while there were other circumstances tending to create the suspicion that it had been criminally administered.

The stomach and alimentary canal contained a very small amount of pulpy matter. This, taken from the stomach and then from successive portions of the bowels, was analyzed, and in each case exhibited the presence of arsenic.

The material of the stomach itself was next examined, and likewise found to contain arsenic. The bowels were then divided into five equal lengths, and each subjected to the proper tests, and with the same results.

The presence of the arsenic in all of these experiments was not only unmistakable, but very decided in amount. How much the patient had swallowed, even presuming that it had been given with intent to poison, it would have been impossible to determine by the most careful quantitative examination, since copious vomiting and purging had prevailed during several days, and up to a short period before death, so that the stomach and bowels were almost completely emptied of their previous contents.

The presence of the arsenic in the substance of the tissues examined naturally induced the presumption that it existed in the liver, lungs, and other portions of the body of the deceased. He regretted that he had not had the opportunity to ascertain the fact, as nothing had been preserved and sent to him except the parts referred to, nor were these in a condition to enable him to recognize either the presence or absence of the physical signs of irritation or inflammation, such as might have been expected in a case of arsenical poisoning.

Hence, in the absence of any proof of an absolute amount of arsenic adequate to destroy life, the mere fact of the discovery of a poisonous adulteration of the medicine administered was considered sufficient to invalidate the evidence against the prisoner, and to justify her immediate acquittal.

During the early days of the trial, nothing occurred to indicate that arsenic had been administered as an adulterating substance of the medicine directed by the prescribing physician. At a later period, the court called for a copy of the prescriptions which had been ordered by the physician, and subnitrate of bismuth appearing as one of them, Dr. Rogers directed his efforts to determine how far that substance was pure.

He was unable to procure a specimen of the identical subnitrate which had been administered, not succeeding in finding the druggist who had sold it, but obtained a number of samples from individuals throughout the city, and prepared, many of them, by different manufacturers.

Of ten specimens, some of which were imported, which he examined, all were found to contain arsenic with the exception of two.

He did not experiment to ascertain the percentage, but inferred it to be small, too much so, he presumed, to have any material effect except in long continued and unusually large doses. It was not shown in this case, nor was it probable that enough could have been taken in that way to produce the vomiting and purging, much less the fatal result. It was to be remembered also that the symptoms attributed afterwards to poisoning, had begun and continued for some time before the bismuth had been taken.

He then exhibited to the College the result of some of his analyses in the arsenical rings deposited within the tubes employed.

He remarked further that the druggists applied to for specimens or samples did not appear to be aware of any liability to this kind of impurity in subnitrate of bismuth, a fact which rendered it still more desirable that the subject should be brought before the notice of the College—since the usual mode of preparing the subnitrate, unless great care was taken in washing the product, rather favoured the presence of arsenic acid, unless the bismuth from which it is prepared be pure.

Considerable discussion ensued on the part of Drs. Bell, Gross, Coates, F. Bache, H. Hartshorne, Hays, Jewell and Levick, upon this case, and upon the use and effects of large doses of the subnitrate of bismuth.

From this it appeared that, although all the Fellows present had been for several years accustomed to prescribing large and small doses of the preparation, and often for considerable periods, no symptom of arsenical irritation had ever been observed. The only unpleasant effect noted was the slight temporary discomfort which is well known to occur in some peculiarly susceptible patients, or from its long continued administration.

Dr. Levick, among others, referred to a case of phthisis, observed by him several years ago at the Pennsylvania Hospital, in which, on account of an obstinate diarrhœa, twenty grains of subnitrate of bismuth were given four times a day during the last two weeks of the patient's life. At the autopsy, the bismuth was found lining the whole length of the alimentary canal. This observation accorded with common experience; and, although affording no evidence of mischievous operation in this particular case, it had awakened his attention, and had ever since induced him to be more cautious and reserved in the resort to the large doses of the remedy which have been prevalent for some years past.

Sickbed.—Dr. Addinell Hewson exhibited a model of a *sickbed* which he had devised and had had in use for some time. He remarked that it was a contrivance which could be readily adjusted to any ordinary bedstead without cutting or disfiguring it in the least. A board (AB, Fig. 1), 15 or 18 inches broad, and of sufficient length, is to be substituted for three or four of the slats forming the bottom of the bedstead. The ends of this board (A and B) should be cut so as to fit in the mortises originally made in the sides of the bedstead for the slats. In the centre of this board there should be an oval hole (C) 10 by 7 inches—its long diameter corresponding to the length of the bedstead. To the upper and lower borders of this board there should be secured strips DE and FG, extending between the sides of the bedstead. These strips should have grooves near their lower borders, and running their full length as seen on FG for the tray containing the bedpan to slide in. They (the strips) should have a depth sufficient to make the plane of these grooves below the plane of the sides of the bedstead. To the bottom of the board (substituted for the slats) there is to be hinged a trapdoor H, to which an oval and somewhat conical pad is to be secured. This door should have a length equal to a little over one-fourth the width of the bedstead, and a breadth of twelve inches. It may be made of one inch stuff, and should then have secured, at equal distances on its under surface, two or three strips an inch broad, and with a depth sufficient to bring their lower surface (when the door is shut up), on a level with the upper edge of the grooves in the side-pieces, or the upper surface of the tray. These strips should terminate in a cross-piece at the far end of the door, and this last piece should extend an inch on either side beyond the door.

Fig 1.

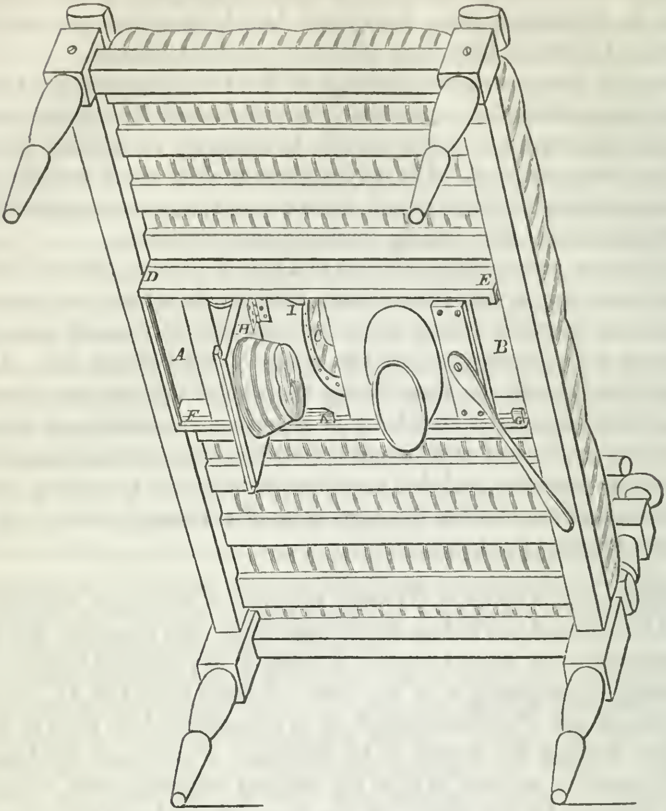
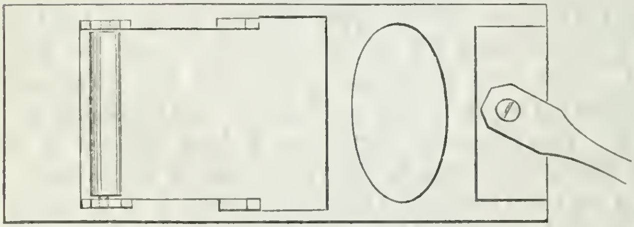


Fig. 2.



A tray (Fig. 2) of sufficient width to slide in the grooves of DE and FG, Fig. 1, should be made of one inch stuff, and have a length equal to five-eighths the width of the bedstead. This tray should have in it an oval hole 10 by 7 inches for the pan, and a square hole fully equal in length and breadth to the door, save at the end near the hole for the pan—here this square opening should be increased in width by the removal from either corner of a piece 1 in. by 2½ in., so as to allow the jutting ends of the cross-piece attached to the door to fall through as the pan is pushed towards the hole in the bed, or to rise up above the tray when it is desired to remove the pan and replace the plug. To close up the door, and thus replace the plug in the mattress, without any friction or jarring, a wooden roller of 2½ inches diameter should be secured to the under surface of the tray at the far end of the square opening, and at such a distance from the notches for the escape of the cross-piece of the trap-door, as will be equal to two-thirds the length of the door. The tray is to be moved by a handle attached to it by a pivot.

For the purpose of preventing the attendant from pushing or pulling the tray too far in either direction, stops should be provided, such as are indicated at DE and FG. Thus, at DE, there is a strip extending between the cleats, which will check the tray in that direction by the roller striking against it. Then the tray cannot be drawn out too far by the two little points on the bottom of the tray, at I and K, infringing on the stops indicated at E and C.

These last checks allow of the tray being drawn out sufficiently far from beneath the bed for the removal of the pan, and when the tray is drawn out this far, the trap-door is supported up in its place by the jutting ends of the cross-piece resting on the distant end of the tray. These jutting ends continue to support the door, as the tray is pushed in, until it is pushed so far as to bring the notches, in the square opening, beneath these ends, when all support is removed from the door, and it falls rapidly by its own weight; then, by continuing to push the tray inwards, the pan is brought beneath the opening in the bed.

A hole should be made in the mattress to correspond with that in the board. It should be oval, and measure 10 by 6 inches on the upper surface. The far side of this hole (from the hinges of the door) should be bevelled so that it will measure in the lower surface 10 by 7 inches. To prevent the weight of the patient pressing the mattress over into this opening, the edge of the hole in the board should be bound round with tin, jutting 1½ inch above its upper surface.

The apparatus will work best when the hinges of the door are as far as possible from the hole—and the plug placed as near as it can be to the free end of the door. The plug will thus be made to describe the arc of the largest circle possible in the swinging of the door, and will therefore not require to be bevelled as much as it would if placed in the centre of the door, and the door hinged nearer to the opening. The bevelling of the plug and of the hole in the mattress is only required on one side—the side towards the handle of the tray—and if this bevelling is made to correspond with the arc of the circle described by the upper and far edge of the plug, the plug will fit with great accuracy in the opening. This plug should be secured firmly to the door either by being tacked to it, or fastened by tapes passed through holes provided for the purpose.

Dr. H., after describing it, said that previous to devising this bed, he was not aware of the existence of any other similar contrivance or convenience.

The bed in use at the Pennsylvania Hospital, with which he and probably most of the Fellows of the College were familiar, possessed in his opinion but little, if any, convenience over an ordinary bed. This hospital bed has a round hole in it of 10 inches diameter, under which a pan is slid on cleats provided for the purpose, and this hole has to be filled up by a plug introduced from above. The patient must therefore be subjected to as much inconvenience, and be moved as much in attending to the calls of nature on it, as he would be in using a bedpan on an ordinary bed. Then, again, the hole is so large and so imperfectly filled by the plug, that the patient invariably sinks down into it, and soon wears away the mattress around the edge, if he is allowed to remain on it for any considerable time. Thus he very soon ceases to be lying on a level surface—a very great *desideratum* in the treatment of most fractures of the lower extremity, and in the prevention and management of bed sores in cases of long or exhausting illness. Dr. H. had recently seen, in the wards of the Pennsylvania Hospital, a mattress worn away in this manner to the thickness of only one inch, and it had originally measured three and a half inches. A patient confined on such a bed must therefore be raised up, if he is lying over the hole, for the removal and replacing of the plug, every time he has occasion to use the chamber; or be slid over the hole, and away from it, if it is desired to obviate the inconvenience of rendering the surface of the bed uneven. In either instance, the patient must be often subjected to considerable inconvenience, and in cases of fractures of the thigh-bone treated by the straight apparatus, the dressing must always be disturbed by such movements.

To obviate such inconveniences, he thought the contrivance which he exhibited would prove of great value. Indeed, in the case (one of excision of the hip-joint) for whose special benefit he had devised the bed, it had proved pre-eminently successful. It had been the source of the greatest comfort and convenience to both the patient and her attendants.

Making the hole oval instead of round, and binding its edge with tin, Dr. H. has found sufficient to prevent the patients sinking into the opening whilst using the chamber, and to effectually avoid any unevenness being produced in the surface of the mattress.

Dr. H. then referred to two ingenious contrivances for the same purpose, with which he had but very recently become acquainted. These were the sickbed of Dr. J. Rhea Barton, and the machine-bed of Dr. B. H. Coates, which are figured and described in the 5th and 9th volumes of the *Eclectic Repertory*. In both these contrivances (which he has learnt from their respective authors have proved very efficient), the removal of a plug in the mattress, and the placing of a pan under the opening, are effected in a similar way to that adopted by him; but in both of these, and especially in Dr. Coates', Dr. H. thought there would be much more friction, and consequently jarring of the bed, and splashing of the contents of the pan, than with the mechanism which he employed.

Dr. Coates felt called upon to congratulate himself, and, indeed, the College, upon meeting with so honourable an inventor as Dr. Addinell Hewson, in reference to the manner in which the latter referred to and exhibited the resemblance of his fracture bed to that of Dr. Coates, and exhibited the publication and plate of this last. (*Eclectic Repertory*, 1818, vol. ix. p. 544.) Dr. C. did not, however, see the defect in solidity of support to which his own invention was obnoxious in comparison with that of Dr. A. H. The trap-door supporting the cushion of Dr. A. H. rested on two jutting points of wood: the cushion of Dr. B. H. C. on three thicknesses of board, one oval and filling the opening in the bottom of the frame of the bedstead, one falling by a hinge, and similar to the trap of Dr. A. H., and one forming part of the slide; and this last on strong cleats. To the adjustment of these it was necessary for the surgeon to attend. In fact, it was the same experience with that of Dr. A. H., and a desire to achieve this very solidity, that gave rise to the invention.

The history of this contrivance was soon told. In 1814 and 1815, the injuries received by men with fractures of the thigh, and other severe lesions near the ilio-femoral joint, when moved for the purpose of permitting the evacuation of the bowels, together with a consequent liability to costiveness, became so apparent, in the Pennsylvania Hospital, as to induce the invention of Dr. J. Rhea Barton. (*Eclectic Repertory*, vol. v. p. 235.) During the use of this for a year or two, Dr. Coates observed that the ropes by which the pressure was sustained yielded somewhat to long-continued extension, and that the nates of the patient consequently pressed against the edge of the perforation in the mattress, and sometimes came in contact with that of the perforated board below. Ulceration was of course occasionally the consequence; and this the more so, in proportion to the immobility of the parts, and, consequently, to the debility of the patient, and the severity of the injury he had sustained. With a view to obviate this, the apparatus figured in the plate exhibited to-night by Dr. A. Hewson, was invented; and it was attempted to secure a firm and continuous support by means of uniform and strong wooden boards and cleats, the bottom of the bedstead being made of wood.

The bedsteads and parts affixed being made in a substantial manner, continued in use for a long period; but when they became ruinous, iron bedsteads had been introduced extensively into the hospital, and the care of the elder Dr. Caspar Wistar, of Arch Street below Eighth, and of Byberry, was employed to adapt a convenient machinery to the new framework. In doing this, Dr. Wistar employed very similar cleats, tilting-piece, slide, and rod, but relinquished the approximation of the handle to the patient's right hand, and the protrusion of the pan towards the foot of the bed, deeming a transverse movement more convenient. Dr. C. was not aware that this modification was ever published.

Fractures of the Scapula.—Dr. Neill exhibited to the College a specimen of diseased scapula which had been mistaken for one of fracture. There was a deposit, which somewhat resembled ensheathing callus, on the superior margin of the infra-spinal fossa, and a similar deposit lining a longitudinal fissure in the same fossa. These were the result of tertiary syphilis, and not of violence.

He then presented two specimens of genuine fracture of the scapula, one of the base of that bone, and the other of the neck, the fracture in the second case involving the glenoid cavity and running longitudinally through the neck so as to traverse the base of the coracoid and spinous processes and a portion of the upper margin of the bone.

Both of these specimens were interesting; the latter being particularly so on account of its great rarity, and as an illustration of the manner in which the repair had been effected in the union of the fragments, and the formation of supplementary bone under the muscles of the joint and about the seat of fracture.

Dr. COATES inquired whether the mortality of fractures of the flat portion of the ilium had been found so great as was generally believed.

Dr. NEILL replied that he had met with several cases of recovery from fracture of the ilium, and promised to report them at a future meeting.

Dr. COATES then related the case of a woman who had been treated for such a fracture while Dr. C. was a resident of the Pennsylvania Hospital. A girl, sitting in conversation with several others, all of a doubtful character, had placed herself, about one o'clock on a hot summer's night, on the sill of a third-story window, with her back towards the street. In this situation she was pettishly pushed backwards by one of her companions, to whom she had given offence, and fell over into the street. She was found to have fractured the left leg, and the right os ilium. The salient appendage of the latter bone was so far displaced as to produce a lateral slipping of about the thickness of the compressed end of a little finger. No severe symptoms occurred, and the patient ultimately recovered.

May 5th. Melanosis.—Dr. HENRY BOND reported the following case:—

April 1, 1845, I was called to Mrs. E. R., aged 50 years. She had usually enjoyed good health, had a vigorous constitution, and had continued to menstruate regularly until this attack. She has had two husbands. By the first she had four children, all deceased, the youngest of whom, if living, would have been 20 years old. By her last husband, deceased several years, she had no children.

When I was called to her, she had been ill many days, and all the account she could give was that she had pain in her back, and much general distress. The pain was chiefly in the region between the spine and left scapula, and under this bone. At first, she complained of pain on the right side, but afterwards much more—indeed, chiefly—on the left side of the spine. The pain sometimes extended, or shot through, to the sternum. Much of the time it was severe in the left shoulder, extending thence down the whole length of the limb. Although there was some arterial excitement, the pulse was not such as to indicate venesection. There was no swelling or tenderness in the shoulder or limb, which were freely moved without any material aggravation of the pain, and little or no tenderness was evinced upon pressing any part of the spine. In the early part of my attendance, the left arm and hand began to be affected with numbness, which never left them; and towards the last, the patient almost entirely lost the use and control of the limb. The ulnar side of the hand and arm were first and chiefly affected. There was no intermission of the pain in the left arm and shoulder, although it varied in intensity, being sometimes very severe.

At first her respiration was free, with little or no cough, expectoration, or morbid symptoms, discovered by auscultation. But this apparently normal condition soon began to change; so that, after a very few weeks, all resonance, all respiratory sound, in the left side, were lost, and in the latter part of the time the cough became very troublesome, attended with the expectoration of only a little mucus, with nothing purulent, and nothing to indicate the character of the disease. Her head appeared to be unaffected, except as the effect of the loss of rest, and of the use of anodynes. In the early part of my attendance, there was sometimes nausea and a variable or capricious appetite. Afterwards, the nausea and vomiting became severe and distressing; and the last part of the time there was nearly a total loss of appetite, and pain more or less severe in the epigastrium; towards the termination, she had at times severe pain in the liver, and a good deal of flatulence. She died May 30, sixty days after my attention was called to the case, and autopsy was performed twenty-six hours after death.

There was so little emaciation that the adipose membrane on the abdomen was from one-third to two-thirds of an inch thick; and there was no melanotic deposit visible upon the surface. Upon opening the thorax, the left pleural cavity was found tensely filled with a clear, yellowish fluid; the lung was entirely collapsed, and seemed to be little more than a web, like a mesentery, for sustaining and giving attachment to a great number of black tubercles of various sizes, from that of a millet-seed to that of a prune. It resembled a cluster of black grapes. The costal pleura was in every part studded with a great number of similar tubercles. These were not generally so large as those in the lung, but they became larger and most numerous towards the spine, where the lung was attached. Melanotic tubercles were likewise numerous in the right lung, but less developed, from the smallest size to that of a pea. This lung appeared otherwise healthy, free from adhesions, and apparently performing well the function of respiration. The left lung presented no appearance of inflammation, adhesion, or suppuration, and appeared healthy, except for the melanotic deposits, and the collapse from the great pressure by the hydrothorax. In the pericardium there were about ℥ij of yellowish fluid like that in the left pleura.

There was a good deal of flatus in the stomach and large intestines, which had probably not existed long. The mucous membrane of the stomach was thickened and softened, with some dark-coloured patches, with enlarged, arborescent bloodvessels. A few melanotic tubercles or deposits had begun to form under, or in, this membrane. The spleen was unaffected with disease. In the liver there was a considerable number of melanotic tubercles, varying from the smallest size to that of a marble; they were situated at or near the surface, and did not project above it.

The uterus was large and very firm, the os uteri very thick, and the passage through the cervix extremely small, so as to be hardly discernible. The right ovary was very much corrugated, so as to present a surface resembling the convolutions of the brain, and it was drawn up so close to the uterus as to make the Fallopian tube very tortuous. There was one melanotic tubercle of considerable size on this ovary. The left ovary was distended into a sac containing about ℥xiv of fluid. This condition of this ovary had not been suspected during the patient's life.

The melanotic matter was nowhere diffused in an irregular or formless manner, but was everywhere gathered into tubercles or rounded masses. The uniformity in this respect was remarkable, differing therein from most of the cases reported. The melanotic matter was everywhere nearly of the colour of charcoal. There was some outside difference in colour, which might be attributed chiefly, if not entirely, to the membranous covering, or to the cellular substance in which the melanotic matter was deposited. Those tubercles which were covered by pleura only, and were developed to such a size as to stretch this membrane, rendering it nearly transparent, were of a clear black. Occasionally, this colour was obscured by a layer of other membrane in addition to the pleura. Tubercles, which were small, or in an early stage of development, as they were in the right side of the thorax, were more or less black, according to the thickness and tenseness of their coating, and according to the abundance of cellular substance in which they were deposited. Those in the liver and ovary were like bullets or shot of pure charcoal. None of the tubercles had become so much enlarged as to burst its covering, nor was there any evident sign of decomposition or maturation.

When tubercles, which were large or most fully developed, were cut open, their cut surfaces looked like masses of carbon, occasionally with shreds or fibres of cellular substance pervading them; they were generally more or less moist, and, when pressed or scraped, yielded what resembled Indian ink or moistened charcoal. The cut surfaces of the smaller tubercles, or those just begun to be formed, presented a much larger proportion of cellular substance, and this occasioned the incised surfaces to be gray or mottled; but yet the melanotic deposit was always black. I did not observe any odour in the tubercles.

REVIEWS.

Art. XVII.—*The Transactions of the American Medical Association, Instituted* 1847. Vol. X. 8vo., pp. 676: Philadelphia, 1857.

The complaint has been made in certain quarters that the later volumes of the printed *Transactions* of our National Association exhibit a sensible deterioration when compared with the earlier ones; that the professional reports and other papers contained in them are inferior in value, and drawn up with less care and ability than those embraced in the preceding volumes. We cannot indorse the correctness of this complaint. That all the papers printed by the Association are not of equal interest or importance; that even the omission of a few would have in no degree impaired the value of its published *Transactions*, we feel no disposition to deny; we nevertheless contend that, taken as a whole, the ten volumes that have been issued present a series of able and instructive papers and reports, which cannot fail to benefit whoever will carefully study them, or apply the materials they offer to the correction and completion of his own observations and investigations. In the calling forth of these papers and reports, and their wide dissemination among the members of the American medical profession, the Association has accomplished, to a certain extent, one of the leading objects of its institution.

Different physicians will, of course, entertain very dissimilar opinions as to the value of medical publications. With the so-called "practical" members of the profession, no publication, however erudite, however truthful and important its doctrinal conclusions, will be esteemed truly valuable that does not present definite formulæ for the treatment of the prevailing diseases in their respective localities. They turn aside with no little scorn from all publications that aim only to establish broad general principles in pathology or therapeutics, or which simply profess to communicate some of the materials to be applied hereafter to the formation of correct theories of the nature, character, and treatment of disease. They feel greatly surprised and annoyed at the high estimate placed by others upon mere theoretical, or, as they would denominate them, speculative treatises. We are fully persuaded that it is by encouraging the preparation of the very class of papers which would be condemned by the class of physicians referred to, and placing them before the profession in a form accessible to all its members, the Association will do the most good, so far, at least, as respects one of its leading objects—the increase of medical knowledge in our midst.

The volume embracing the *Transactions* of the Association at its tenth annual session, held May, 1857, at Nashville, Tenn., opens, after disposing of the minutes of the session, with the address of the President, Dr. Zina Pitcher.

This is a most pleasing discourse, enforcing with due zeal and energy the true relationship of medicine, as a science and an art, to the civil institutions of the country, and the social condition of the people; pointing out the state of the profession in the United States, the causes that have tended to its depression, and the means best adapted to elevate it again to its legitimate standard as an instrument of the greatest good to the greatest number. These interesting points are rapidly but ably sketched, and the inherent nobility of our profession, with its capacity, by a proper course of action among its members, to vindicate its character openly and triumphantly, and to sustain its claims upon the government, and upon society at large, as a beneficent institution, essential alike to the first in the fulfilment of its legitimate objects, and to the last for the security of the best interests of the citizen, whether in his individual capacity or in his relation to others and to all.

The first of the regular reports in the present volume is on the Medical Topography and Epidemics of Maryland. It is a well drawn up and judiciously arranged document, comprising some valuable materials for the elucidation of the etiology and treatment of the leading diseases of the State.

We cannot agree with Dr. White, one of the contributors to this report, in the remarks he makes when speaking of the diseases of Carroll, Hartford, and Baltimore Counties, that,

> "From observations made on the frequency of the occurrence of consumption in high and low districts of country, he has concluded that there are one-third more in the former than in the latter; and he thinks that many persons in whom the predisposition to the disease is very strong, might altogether escape by removing to a malarial district before any of the physical signs of phthisis are manifest."

It would carry us too far were we to attempt to adduce the large mass of conclusive evidence in refutation of the very erroneous supposition that low malarial regions of country are more exempt from pulmonary tuberculosis than are healthy and dry upland situations. To recommend the removal of those predisposed to consumption to flat, marshy districts, where periodical fevers prevail, under the supposition that there is anything prophylactic of tubercular disease of the lungs in the air of such localities, is a gross and pernicious error; it was, it is true, at one period a prevalent notion with certain English physicians that a residence in fever and ague districts was adapted to benefit the consumptive; but more accurate statistics have shown that consumption is as prevalent in these districts, if not more so, than in districts where periodical fevers are unknown; a fact now very generally admitted by the most authoritative writers on tuberculosis.

Although not next in order, the report of Dr. John F. Posey, on the Topography and Epidemics of Georgia, may as well be noticed here.

The sketch presented by Dr. Posey of the medical topography of the State is a very excellent and satisfactory one. In its topographical survey, the State is divided into three sections. The first and largest extending from the sea-coast and Florida line on the south, to the head of navigation of the larger rivers. The second, separated from the first by a line beginning at Augusta, at the head of navigation of the Savannah River, and running nearly W. S. W., by Milledgeville and Macon, to Columbus, at the head of navigation of the Chattahooche, and bounded on the N. W. by a line drawn from the N. E. corner of the State, and running nearly S. W. till it reaches the west boundary line of the State, about half way between Columbus and Nicajack, on the Tennessee River. The third, and much the smallest, occupying all the space lying N. W. of the last mentioned line.

The first division, geologically considered, is of tertiary formation, varying in height and quality of alluvium according to the distance from the sea-coast. It is mostly wet and swampy. The geological formation of the second division is primitive. The surface of the country is more hilly, and the streams are mostly confined between high banks, without any marginal marshes, and with rocky beds, over which the current is generally very rapid. The third division comprises the limestone region of upper Georgia. The face of the country presents a succession of broad, rich, fertile valleys, separated by intervening ridges from one to several miles across, of various degrees of elevation, rising in some instances to the magnitude of mountains, covered originally by dense forests, which are now rapidly disappearing. The valleys are all well watered.

A very rapid enumeration is given of the diseases prevalent in each of the foregoing divisions. In the first, malarial fevers prevail; the eastern portion, however, is exempt from the occurrence of any malignant and fatal epidemics. The other diseases met with in this region are catarrh, pleurisy, and pneumonia. In the winter and spring, epidemic pneumonia of a typhoid type is not unfrequent. Further inland, during seasons prolific in fruit, dysentery is liable to prevail.

In Savannah, the yellow fever was but little known until after the war of 1812.

> "It was not until the winter of 1816 that foreign shipping began to resort to Savannah, and the next summer the harbour was crowded. No care was taken to time the arrivals to the healthy months, and the seamen were strangers entirely unacclimated. In the month of August, the yellow fever first broke out. It was confined to the seamen, and continued until the shipping departed; there were not many cases. During the following year, 1818, there were few arrivals, and all had left port before the summer had set in, and there was but little sickness.
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> "In the beginning of the year 1820, a great part of the city was burned down, and the population was consequently crowded into the narrow limits left by the fire. The ruins were, for the most part, left in a state of total neglect, and many of the uncovered sinks and vaults remained open, exposed to the weather, until they were filled up by the sand washed into them by the rain, which was more than usually copious in the latter part of the season. The excavations made for the foundations of new buildings were highly offensive, particularly during the night. In the latter part of the summer, the yellow fever began, and increased to a frightful extent, but its ravages were still mostly among the unacclimated, few natives or old residents dying. The disease continued until late in the winter.
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> "In 1821, the yellow fever began as in the year before, and now attacked the natives and old residents, more of whom died than did the year before."

The city was now thoroughly cleansed, and the yellow fever disappeared, and for five years remained absent from Savannah. Sanitary measures were soon, however, neglected, and the city became again abandoned to filth. In 1827, the yellow fever once more made its appearance, and carried off several of the most prominent citizens, all old residenters, in rapid succession. The neglected sanitary measures were now resumed, and the city subjected to a process of thorough purification. The yellow fever did not again recur until 1854, when the city being crowded with foreigners, mostly Irish labourers, it was attended by an extent of mortality that excited general consternation. But few of the acclimated were severely attacked. The epidemic this year spread more widely through the State than it had previously.

Cholera was epidemic in 1834. In other portions of the State, typhoid fever, hooping-cough, mumps, varicella, scarlatina, measles, erysipelas, rheumatism, and dysentery, are enumerated as among the prevailing diseases.

The volume contains also a report on the Medical Topography and Fauna of Washington Territory, by George Suckley, M. D., U. S. A., and one on the Medical Flora of the same territory, from the pen of Dr. J. G. Cooper. Both reports are replete with interest.

In regard to the diseases of Washington Territory, Dr. Suckley remarks—

> "The settlers are generally healthy, and, in some cases, their constitutions seem strengthened by their change of location. In almost every case of acute disease, venesection is advantageous, and remarkably prompt in its good effects, showing a great contrast to the condition of affairs in some of the worn-out, over-populated places in the Atlantic States. The country is pre-eminently healthy, in support of which is the fact that during nearly three years' practice as medical officer at military posts on Puget Sound, and at Fort Dallas, I never lost a single soldier by disease, although the garrison's forces ranged from sixty to three hundred men during the time. In fact, I believe that my experience coincides with that of almost every medical officer who has been stationed in the country. The most prevalent diseases in the western section are rheumatic in their origin. Many persons who have previously lived in warmer dry climates are very subject to acute and chronic rheumatism after coming to this part of the territory. This is readily accounted for by the humidity of the climate, especially in winter, which here assumes the character of a 'rainy season.'"

For the especial benefit of such as still look upon the life of the savage as the one most friendly to health and longevity, and whose grand prophylaxis of disease is a system of hardening, poor diet, and exposure—as near an approach to savage life as can be attained in the midst of a civilized community, we extract from the report of Dr. Suckley the following paragraphs.

> "Throughout the country, phthisis pulmonalis appears to be the most common non-specific disease with the aborigines. Irregular habits, exposure occasionally to famine and to cold, especially while sleeping, seem to be the principal causes of this in the far interior and in the mountains. This, I think, is aggravated by the general habit of smoking the dried leaves of the *arbutus uva ursi*—smoking it by *inhalation*, in the Indian fashion.
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> "On the coast, and in the settled districts, although hardships and scarcity of food do not exist in any proportion to what is encountered in the interior, yet the same disease is even more common, the unfortunate result of the bad habits, &c., attendant upon their intercourse with the whites."

Having thus briefly noticed the reports on medical topography and epidemics, we turn back to the report of Dr. D. M. Reese, of New York, on the subject of "Infant Mortality in Large Cities—the Sources of its Increase, and the Means for its Diminution"—a subject of deep interest to every one, whether considered simply as a medical question, or in its immediate bearing upon a most important branch of civic hygiene.

A residence in large and populous cities has ever been esteemed inimical to health, especially during infancy and childhood. Wallis, whose treatise on diseases was published first in 1710, styles cities "the graves of infants."

> "For here," he remarks, "there die, upon an average, five times the number of quite young children that do in the country; and in the purlieus of vast metropolises, where dwell the poor and the improvident, the proportion of deaths that happen among infants, compared with what occur amid any rural population of equal numbers, is, perhaps, even much greater."

It is very certain that the value of life is vastly diminished, and the chance of surviving the first few days, or months, or years, of existence, rendered extremely problematical, wherever large masses of people are crowded together within comparatively narrow limits—living continually immersed in their own exuviæ, and breathing over and over again the same polluted atmosphere; as was formerly the case when cities were laid out with little attention to sanitary rules, and when these same rules were equally disregarded in the construction of the dwellings, in the domestic economy, the food, habits, and clothing, of all classes of the citizens. Of late years, it is true, cities have, in most of these things, changed for the better, and their mortality, generally speaking, has in consequence become greatly diminished. There is still, however, much in the sanitary condition of our best laid-out, and most wisely policied cities, as well as in everything appertaining to civic residences, civic life, and civic institutions, that calls loudly for improvement.

In respect to the leading cities of the United States, in their freedom from disease, and the medium duration of their lives, the adult population will very generally bear a favourable comparison with the same population in the most healthy of our rural districts, the comparison, in these respects, being often rather in favour of the first. But so far as regards the infant portion of the populations of our larger Atlantic and Southwestern States, the annual destruction of life to which it is subjected is most fearful, exceeding greatly that which occurs in even the most insalubrious of the cities of Europe, and, so far as we may be permitted to infer from reliable data within our reach, it is every year on the increase.

From what does this result? Are the causes of the appalling infant mortality of our larger cities discoverable? Must they be set down as inevitable, or are they of a nature capable of being controlled, mitigated, or entirely removed? These are important questions that demand our serious consideration. The entire subject, indeed, presses itself most forcibly upon the attention equally of the physician and the philanthropist. No one can turn with indifference from the startling fact revealed by the bills of mortality of our principal cities, that of the whole number of deaths which annually occur there, one-half are of infants before they have attained their fifth year.

This immense destruction of infantile life has been attempted to be accounted for upon the supposition of a natural law, in obedience to which a certain number of deaths must take place at each stage of existence, in order that the entire population of any given locality may be kept within its proper, definitely prescribed limits, and the individuals composing it made to bear, as regards age and sex, a certain relationship to each other, and to the whole mass. Although there are valid reasons for believing that there is a natural law, so regulating the births and deaths of each community, as to preserve in it a definite relationship between the ages and sex of its members, we must nevertheless reject it as explanatory of the question before us—the cause, namely, of the immense waste of life, during infancy, in our large cities, and our power to discover, modify, or remove it.

The investigation of this question is the subject of the report before us. It is entered upon by Dr. Reese in the right spirit, and he has, with great clearness and accuracy, developed the more prominent of the propositions which bear directly upon it, and by following out which we can alone expect to arrive at any satisfactory solution of it.

In many of the cities of the United States most noted for the amount of infantile mortality (as shown by their bills of mortality), there is one thing to be taken into account which we believe has, independent of the accidental sanitary condition of these cities—throughout, or in part—a very decided influence in producing the predominance of deaths that occurs in the youngest members of their populations. The circumstance alluded to is the intense cold of the winter months, and the almost tropical temperature of their summers. This climatic peculiarity alone renders both the winter and summer peculiarly inimical to life in early infancy, especially among the poor and improvident classes, who inhabit localities and dwellings that are crowded, ill-ventilated, damp, and uncleanly—localities and dwellings that are at all times eminently unhealthy, but especially so during the excessive heats of summer, and in the depth of winter, when, however carefully the houses are closed from the outer air, the atmosphere within them is not only stagnant and mephitic, but uncomfortably chilly.

In Philadelphia, the largest number of deaths in infants under five years of age, takes place during the months of June, July, August, and September, which is the season of greatest heat, the mean range of the thermometer being from 70° to 79°. The next highest amount of mortality at the same age, occurs during the months of December, January, February, and March, which is the season of greatest cold, the mean range of the thermometer being from 30° to 35°. The smallest number of deaths in those under five years of age, happens during the months of April, May, October, and November, when the mean range of the thermometer is from 50° to 65°. Thus, during a period of eight consecutive years, when the city remained free from any epidemic visitation, the entire number of deaths in patients under five years, during the four hottest months of the year, was 8,781; during the four coldest months, 5,641; and during the four temperate months, 4,815.

In the report before us, Dr. Reese, glancing at the shamefully high figure that, in nearly all the bills of mortality of our large cities, is set opposite to the item of stillborn and premature births, remarks very correctly:—

> "It will be perceived that these 'stillborn and premature birth' interments number equal to *one-fifth* of the entire infant mortality of the last half century, and hence ought not to be overlooked in any estimate made upon this subject. Apart, however, from their numbers, they must be included for another and a weightier reason, since the causes of mortality among children of tender age are, in a multitude of cases, to be found only by extending our inquiries to their *intra-uterine* life, and the physiological state of the parents, but especially the sanitary condition of the mothers, their hygienic and moral habits and circumstances. Nothing can be more certain than that the viability of the infant after birth, and its tenacity of life, depend very greatly upon the condition, circumstances, habits, and health, of the parents, particularly those of the mothers, during every period of pregnancy; and hence, pathological and demoralizing agencies, operating upon parents in reproduction, and during utero-gestation, are often the sources of 'premature birth and stillborn' cases, but not less the cause of early death in their offspring after birth, and resulting in a vast proportion of the infant mortality so sadly and so universally deplored. These considerations may suffice to justify our plea for including the stillborn interments among the victims of infant mortality."

By a table given in the report, exhibiting the mortality of the city of New York for fifty years, ending January, 1854, it is shown that the mortality among infants under one year old greatly exceeds that occurring between one and five years of age; while the mortality under two years is nearly four times that between two and five years. Moreover, the number of children who die under five years of age is greater than the whole mortality between five and sixty years of age! Hence the perils of life during the five years of infancy are greater than during the fifty-five years subsequent to that age.

> "The dangers to life attendant upon early infancy, and especially during the first year, are," Dr. Reese remarks, "well understood by the profession and the public. These arise from a variety of causes, viz:—
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> "1. Defective vitality at birth, hereditarily transmitted from one or both parents, whereby the infant is not viable, and perishes from inanition, nutrition

and development being physically impossible. These are reported in the bills of interments as cases of marasmus, tabes mesenterica, consumption, &c.

"2. Mismanagement of infancy by parents, nurses, or doctors, in feeding and physicking the newly born, depriving them of the nutriment simultaneously flowing into the mother's breast, as Nature's only and all-sufficient supply for nutrition and development, and substituting therefor the thousand slops, teas, and drugs, which officious grannies of both genders are wont to prepare and administer." "Thousands thus perish in early infancy, their deaths being ascribed to colic, diarrhœa, dysentery, or convulsions, though oftener produced by drugging for the relief of symptoms which the mother's earliest milk would have prevented or cured, life being sacrificed by soothing syrup, Godfrey's cordial, Jayne's carminative, or some other vile mixture of molasses and water, with opium and brandy—nostrums more deadly poisonous to budding life than all the diseases of infantile existence."

"3. The ratio of infant mortality in large cities is conceded to be much greater than in country towns or rural districts, and for the reason that, in the former, so large a proportion of the births take place in the abodes of the indigent, which, if not in garrets or cellars, or shanties, are sadly deficient in the supply of light, pure air, free ventilation, cleanliness, clothing, fuel, and wholesome food, so necessary to the health, comfort, and safety of the mothers not less than their offspring, whose vitality is henceforth to be derived from the maternal bosom, in the milk, whose quality depends on the blood which circulates in her veins. Multitudes of infants born under these adverse circumstances of atmospheric contamination, perish in a few weeks or months for lack of pure air; and instead of marvelling at the extent and increase of fatality among such, we might rather wonder that any survive.

"How much of the infant mortality in large cities, and its alarming increase, is the legitimate result of quackery in some one of its varied forms, to which sick children are subjected, may be difficult even to conjecture." "Every phase of quackery is characterized by an overweening faith in drugs, and a delusive confidence in specifics, inspired by the brazen effrontery of the charlatans who 'by this craft have their gains,' and who employ themselves in encouraging the people to become, with the aid of their new system of drugging, 'every one his own doctor.'" "The popular mind is indoctrinated by these quacks into the belief that, in all ordinary diseases, they may confide in these specifics, especially for *infantile diseases*. And that thousands are annually added to our infant mortality by diseases entirely within the control of the healing art, the early periods of curability being lost in these experiments of ignorance by credulous parents and pretended physicians, is notorious in every city. So true it is, in this connection, that 'for want of *timely* aid, millions have died of medicable wounds;' nor is it less true, that by injudicious and misguided interference with drugs, by the ignorance of mothers, nurses, and doctors, our infant mortality is immeasurably augmented."

Dr. Reese concludes his general summary of the causes of infant mortality, by alluding to that very fruitful source of disease and death, in early life, among the offspring of the depraved and vicious families that abound in large cities—the transmission, namely, of

"the hereditary poisons of either scrofulous, scorbutic, or syphilitic disease, from one or both parents to their offspring, whereby their young blood is fatally tainted with constitutional maladies, extending to the second and even the third generation." "That multitudes of children thus perish early from diseases which descend from their parents, constituting a fatal inheritance of poisoned blood, is a fact as demonstrable as any other in human pathology. Hence it cannot be overlooked in any inquiry after the sources of the extent and increase of infantile mortality in large cities."

To remedy the evils set forth, to remove some, at least, of the causes which, in our cities, consign such multitudes of the young to a premature grave, and thus enhance the value of life, from the cradle upwards, Dr. Reese offers the following suggestions: 1st. The enactment and enforcement of stringent laws for the regulation of marriages, prohibiting alliances with individuals of either sex who are the subjects of either of those diseases which are known to be hereditary or transmissible to offspring, or such as are fatal to infantile existence. 2d. To remove the temptations to the crime of abortionism, and to prevent the abandonment or murder of new-born infants, by the vicious and depraved, the establishment by the State of foundling hospitals in all our large cities, and of lying-in asylums, for expectant mothers, married or unmarried, in which they may be comfortably attended in the hour of their need, or, if they have sinned, conceal their shame, and then "go and sin no more." 3d. The erection of suitable residences for the deserving poor, in accordance with the laws of health and life, and the establishment, in every community, of a proper sanitary police, whose duty it shall be to enforce obedience to these laws. No medical treatment is adequate to arrest diseases, or diminish their fatality, while their victims are found in the squalid and filthy abodes of the indigent, from which pure air, and often the light of heaven, are excluded, as among the wretched multitudes of our "cellar population," who furnish annually so large a share of our infant mortality. 4th. The erection and endowment of hospitals for sick children, in healthy localities in the immediate vicinity of all large cities, where the children of the poor, when attacked by disease, may be removed from out the fatal atmosphere of their homes, by which their malady has been engendered, and amid which their recovery is scarcely possible. "As each of such habitations becomes, for lack of air, ventilation, and cleanliness, a centre of disease among its inmates, so, also, is it," says Dr. R., with great truth, "a nucleus, whence its atmospheric poison radiates through the neighbourhood, infecting, by a physical necessity, the whole vicinity. It is thus that endemics become epidemics, and a filthy tenant-house is the source of pestilence, infecting the section in which it is located, and often sweeping over a wide space, or including a city in its ravages." Children's hospitals for the reception of the squalid offspring of the indigent, hence become important not simply from considerations of humanity, but as a means of ministering to public economy and public safety. 5th. The nursing of their infants by all healthy mothers until the first dentition is well advanced—bringing up by the hand, as it is termed, being always hazardous and generally fatal, especially when we reflect upon the adulterated or poisonous character of the milk with which our cities are supplied, and the unwholesome character of much of the other nutriment with which infants deprived of their mother's breast are so generally attempted to be fed. It is possible, all must admit, to supply to a certain extent the loss of the mother's breast by that of a suitable wet nurse; to procure such a one, however, who, to her other qualifications, adds faithfulness and honesty in their fulfilment, is attended, in most cases, with insuperable difficulties.

In conclusion, Dr. Reese remarks:—

> "Let it not be supposed that the extent and increase of infant mortality is exclusively among children of the poor. The contrary must be familiar to us all, and statistics could readily be cited, which would render it apparent that in the better circumstanced, and even among the wealthier classes of our cities, the instances are rare in which the most favoured families succeed in preserving a moiety of their children through the perils of infancy. How much of the mortality in such is to be ascribed to the luxuriant and effeminate modes of life into which mothers, or those about to become mothers, are betrayed by the fashionable follies of the times, it might be difficult to compute, and as difficult to overestimate. And that much, very much, of serious and even

fatal infantile disease is the direct result of the indiscretions of nursing mothers whereby the quality and quantity of their milk are deteriorated, and the health of their children overthrown, professional testimony might be cited in abundance. Errors in diet; late hours; crowded assemblies; the excitements of the opera, the theatre, or the ball room; the transitions from high to low temperature; the exposure to night air, especially with insufficient clothing, such as exacting customs and fashion demand, are all incompatible with the duties of maternity, especially during pregnancy and lactation."

The whole of the suggestions presented by Dr. R. for reducing the amount of mortality during infancy in the principal cities of the Union are to be approved, could they all be carried into effect. To regulate marriage by legal enactments, so as to prevent it being contracted between individuals who from actual disease or hereditary taint, or any other cause, should be liable to produce offspring with a strong inherited proclivity to disease, would be impossible, excepting under a government more despotic than any which now exists. All that can be done is to enlighten public opinion on this as on all the other subjects of personal hygiene. In relation to foundling hospitals, if reference be had to the statistics of the large institutions of this kind in Europe, some might not be inclined to rank them among the means best adapted for the preservation of infant life; still there can be no just reasons for denying the possibility of a reform being introduced into all that relates to the location, construction, and management of these hospitals, adequate to remove the objectionable features appertaining to nearly all those which exist on the continent of Europe. This, we suspect, can be more readily done than the prejudice existing against orphan asylums in the American mind can be overcome.

The next report is on the Medico-Legal Duties of Coroners, by Dr. Semmes, of Washington, D. C.

In the correct and faithful performance of the duties which are confided by law to coroners' juries, every citizen, whatever may be his position in the community, has a deep concern, if not for the security of his own life, freedom, and character, at least for the vindication of the majesty of the laws, and the defence of the most important interests of the community generally. This must be apparent from a consideration of the purposes for which coroners' juries were established as one of the juridicial institutions of our country. These purposes are, 1st, to inquire into the cause of death in every case in which the extinction of life is shrouded in mystery, or has taken place suddenly and without being preceded by any known or apparent ailment or disease; and 2dly, to investigate the circumstances connected with every case of death from violence, in order to determine whether they were the result of a premeditated criminal act; of unjustifiable neglect; of mere accident, or have occurred in defence of person or of property: and in those instances in which the death is found to be the result of any criminal act or omission, to discover through whose agency, and by what means it has been produced.

To rightfully fulfil these all-important inquests, and conduct them to a correct and reliable verdict, in which the ends of justice shall be accomplished by the conviction of the guilty and the acquittal of the innocent, demands on the part of those by whom they are conducted, not merely an amount of logical acumen, and habits of close observation that are to be acquired only by a clear head, close study, and much practice, but, likewise, an amount and variety of scientific knowledge and skill which cannot be possessed save by those whose education has been especially directed to the subject of medico-legal investigations. Yet the law, or at least the manner in which we find the law administered in this country, actually intrusts these inquests, upon the faithful performance of which may hang the life or death, the freedom or imprisonment, the happiness or misery of a fellow creature—innocent perchance of all crime—to an ignorant coroner—selected in the majority of cases solely on account of his fealty to party, and to, in all probability, still more ignorant jurors picked up accidentally on the corners of the streets, or called forth from taverns and oyster cellars, with but confused notions as to their duties and responsibilities, and an entire deficiency in the qualifications essential for their correct and faithful fulfilment.

The practical working of this most absurd system, by which the preliminary inquiries that are essential, in every case of homicide and murder, to the attainment of a just verdict, are intrusted to the least expert members of the community, is to render the inquest of the coroner a thing of no value. Instead of throwing light upon the nature of the crime committed, and the manner of its perpetration, and thus serving as a useful directory for the subsequent proceedings in the case, the inquest of the coroner is in a great measure ignored by the courts, and exerts, if any, only a prejudicial influence upon the mind of the jury; the result of the inquest being seldom based upon the correct medico-legal aspect of the case to which it refers, but too generally a hasty opinion from a one-sided representation of facts, or a mere reflection of popular opinion or of that exaggeration and falsification almost invariable concomitants of the excitement which is produced by the actual or supposed commission of a horrible crime. Even, however, when free from these objections, the verdict returned by the coroner is often so vague and nugatory as to leave the question of the cause of death it was his duty and that of his jury diligently to inquire into, as much of a problem as though no inquest had been made. We have collected from the public papers, some thirty instances, in Philadelphia alone, where the finding of the coroner's inquest was, "Died from some cause unknown," and this too in cases in which a properly conducted investigation, by a competent tribunal, could not have failed to reveal the nature and cause of death, or to determine, at least, the important question, whether the extinguishment of life was the result of disease or of violence.

When properly filled, and its duties correctly and faithfully executed, the office of coroner is too important a one to be readily dispensed with. In view, however, of the gross carelessness and direct abuses with which it stands rightfully accused, and the evils thence resulting, it is high time that public attention should be directed to the necessity of such a reform in respect to it as shall secure the necessary qualifications in the coroner himself, and of his jurors, and such an administration of their respective functions, as shall render them what they were intended to be, "the terror of the guilty and the safeguard of the innocent." We are glad that the subject has been brought before the medical profession in the direct and lucid manner in which it is discussed in the report of Dr. Semmes. Physicians, all of whom, from the nature of their studies, their almost daily experience, and clinical observations, are necessarily rendered, to a very great extent, familiar with the principles and practice of medical jurisprudence, can readily appreciate the existing evils in the administration of the coroner's duties, and the nature of the reforms demanded for the removal of these evils, and the preventing of their occurrence in the future.

The very able report of Dr. Semmes will be read with deep interest by every person of intelligence, whether in or out of the profession. We regret that means have not been taken to give it a more general circulation than it can attain in the pages of these *Transactions*, with a view to bringing at an early date, and in a proper form, the entire subject embraced in it to the notice of our State legislatures, that they may give to the reforms necessary the sanction of law.

The reforms suggested in the report before us are thus described:—

> "The first measure, it is evident, will be to provide by law for the proper qualifications of the officer upon whom the medico-legal duties now intrusted to the coroner's office are conferred, for their correct and faithful performance.
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> "In all the cases in which an inquest is required to be held by the coroner, three questions present themselves: 1. What was the cause of death? 2. Was it the result of criminal agency? And, should this second question be answered in the affirmative, 3. By whom was the criminal act perpetrated.
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> "The solution of the first of these questions should, in our opinion, be submitted to a special commission composed entirely of experts, and the proper investigation of the others left to the jury; and whatever may occur in the course of the inquiry instituted by the special experts, in the least calculated to throw light upon the second or third questions, can be readily communicated to the jurors, for their instruction.
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> "Your Committee would suggest that the office of coroner, as now established by law, be reorganized entirely upon a new basis; and that the person appointed to the office should be in all cases a competent and respectable doctor in medicine, to be selected by the judges of the criminal courts, and that, while the tenure of his office should be during good behaviour, the incumbent to be liable to impeachment before the court for misdemeanors and derelictions of official duty."

Upon receiving notice of any case of death in which an inquest into the cause by which life was extinguished is demanded—

> "The coroner shall call to his aid two other doctors in medicine, and, in conjunction with them, shall proceed forthwith to make the required inquisition in the fullest and most thorough manner; power being conferred on him to take charge of the dead body, to summon and attach witnesses, and to take whatever steps he may deem necessary for the lawful and constitutional performance of his duties. The entire proceeding of the medico-legal examination shall, at the discretion of the coroner, be strictly private; and in case of the refusal of any parties to comply with his injunction against publication, he should be clothed with the power of holding and punishing the contumacious offenders, as having committed a judicial contempt.
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> "The examination of each case being completed, a full and detailed statement of it shall be drawn up, with the conclusions arrived at in regard to the cause of death clearly set forth; which statement, signed and sworn to by the medical experts by whom the examination was conducted, shall be delivered to the ordinary jury of twelve 'good and lawful men,' for their instruction. After the examination of other material evidence, and when the jury shall have returned their verdict, with the statement indorsed and sealed by the coroner, it shall by him be filed in the office of the prosecuting attorney for the district or county."
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> "It may be necessary, in the large cities and populous counties, to appoint two or more coroners; different districts with concurrent jurisdiction, being assigned to each."

We have next a short report on the use of cinchona in malarious diseases, by Dr. E. Hinkle. The object of the report is to direct attention to the value of the pure alkaloid and sulphate of cinchonia, as anti-periodic agents. Dr. Hinkle states that he can fully recommend the use of the pure alkaloid cinchonia in all periodical diseases, neuralgic affections, and debility following acute diseases; it proving in his experience, quite as efficacious as quinia, and in many cases, more prompt.

To this report succeeds one on the blending and conversion of types in fever, by Dr. C. G. Pease, of Janeville, Wisconsin.

We have been most favourably impressed by this report. Whether it be in consequence of the intrinsic truth and value of all the views set forth in it, or the affinity of these with certain pathological views, for many years held and taught by us, matters not; there are few who shall give to the report a careful and candid examination, but will admit that the author has cleared the questions discussed by him of much of the confusion and mysticism in which they have been heretofore enveloped.

The dispute in respect to the blending and conversion of types in fever has arisen pretty much, we suspect, out of the different meanings given by pathologists to the term type. By some it is used to indicate a positive, radical, and specific difference in the character and nature of disease, by others only a modification of the general character of a particular disease, resulting from either a difference in the intensity of the causes by which it is produced, or in the condition of the patient, either as respects the receptivity of his system for morbid impressions, or its recuperative energies under the disturbing influence of the morbific agent to which it has been subjected.

Admit the first of these propositions, and it must be evident that the only way in which anything approaching to a blending of types in disease could possibly occur, would be by the patient being affected, at one and the same time, by two distinct diseases. By turning to the second proposition, it will be perceived how readily a modification in certain of the phenomena of any case of disease will give origin to a condition of things in which, apparently, different and distinct types—types that usually occur separately—are blended together.

If the first proposition be true, although it may be that, when two diseases occur simultaneously in the same patient, the stronger shall overpower and expel the weaker, yet no conversion of disease can, strictly speaking, take place; whereas, according to the second proposition, the type of a disease may become readily converted into one altogether different, without any change, in a strict pathological sense, of the actual nature of the disease, or without the necessity of supposing the change to be effected by the patient having been subjected to any new or different morbific cause.

In the report before us, Dr. Pease refers the phenomena which characterize all the different forms of fever to the character of the producing agent, its degree of force, the peculiar mode of its action, and the channel through which its effect is wrought. As two or more causes may be operative at the same time, the concurring phenomena will blend in proportion as these causes are relevant, or the condition of the system which each is calculated to produce is identical. When, on the other hand, opposite or irrelevant causes are operative at the same time, the increasing potency of the one may completely obliterate the effects of the other, which were at first, perhaps, the most apparent, and thus a complete conversion of phenomena take place.

That diseases, widely differing in their character, may result from the same causes, is unquestionable. The causes of fever, though sometimes specific, are most commonly of a general or incidental character; as

"cold, heat, moisture, and aridity, acting by every possible combination in every possible abnormal degree upon the system—great atmospheric vicissitudes, want of fresh and wholesome food, fatigue and surfeit, noxious gases arising from the decomposition of vegetable and animal matter—human effluvia arising from crowded and unventilated rooms, and from persons already diseased, some undefined electrical state, and in epidemics some general atmospheric influence."

Now, from the most rigid scrutiny of the foregoing causes, it were impossible to determine what will be the form of disease produced by their action, or what the phenomena it will present.

"Miasm and malaria," remarks Dr. Pease, "are very convenient terms, and proper enough, if we allow them to stand as the algebraic x and y, for anything which future investigation shall prove to be an exciting cause of fever.

"That fevers do arise from the operation of these general causes, is certain; but that the state which we call fever is any more likely to result from them than any other distinct forms of disease, remains to be proved. We must look, therefore, to the potency of the cause, and the channel through which its effects are wrought—that is, the part of the system primarily affected—for an explanation of the phenomena which distinguish the various forms of the disease."

After alluding to the strong probability there exists for supposing that, in certain forms of fever the blood is the channel through which the disease is produced, whilst in others the primary changes are wrought in the nervous system, Dr. P. remarks, that the fact of the latter becoming implicated sooner or later in all forms of fever, will be denied by no one.

"That the nervous symptoms vastly preponderate in the early stages of some forms, while they appear later and apparently secondary in other forms, will, I think, accord with the experience and observation of most practitioners."

According to Dr. P., therefore, in some forms of fever the primary impression of the morbific cause is on the nervous system, and its effects upon the blood are produced secondarily; while in other forms, again, the impression of the fever-producing agent is primarily on the blood, and secondarily upon the nervous system.

"It is impossible," says Dr. P., "to isolate any form of disease altogether. Especially is this true of fever. The change wrought by the fever-making agent is a change ultimately upon the whole system. In consequence of the impure and imperfect condition of the blood, the solids suffer. The condition of one organ is the condition of all the organs so far as the fever is concerned. Fever has consequently no anatomical character—it is a state."

Denying that each of the types of fever is based upon a specific difference in the character and cause of the disease, Dr. P. proceeds to show that various forms of nervous fever are the frequent result of simple exposure to great atmospherical vicissitudes, the agency of any miasmatic influence being in these cases out of the question; and, further, that it is no uncommon occurrence for a fever to commence as a pure intermittent or remittent, to pass steadily on from one degree of severity to another, until it assumes a genuine typhoid type. He concludes, therefore, that from the action of the causative agents of fever is produced a certain undefinable condition of the system which may be called the febrile diathesis.

"This diathesis," he remarks, "differs from the physiological state from the least possible departure from the standard of health to a degree incompatible with life. The phenomena which determine the type of the fever, determine, also, more or less perfectly, the channel through which the effect is wrought, and measure the degree of departure of the febrile state from the healthy standard. The phenomena in a case of intermittent and in a typhoid fever have scarcely the slightest resemblance when first fully developed. But when this intermittent has passed on from one degree of severity to another, the blood becomes involved, the phenomena become more and more alike as the state of the system in the two cases becomes more and more identical, until it becomes difficult, if not impossible, to distinguish between them. On the other hand, the typhoid fever, when, through the poison of the blood, the nervous system becomes involved, presents, more or less, the phenomena of the remittent. This is particularly true in cases of recovery, the remissions frequently becoming quite perfect. Moreover, the complications which occur in the two forms agree in kind, as the state of the system in the two cases becomes identical. The congestions or inflammations which are so common and appear so early in the nervous fevers, do not appear in the other fevers till the nervous system becomes involved, and then the same organs are the points of attack.

"What the particular change wrought by any deleterious agent upon the system is, and the precise manner in which the change is effected, is not, perhaps never will be, known. That the effect of all agents, whether general or specific, is essentially the same, is altogether probable.

"Diseases do not blend, forms of the same disease do. We say then of fever, whatever may be its form, or with whatever other disease it may at any time be associated, it is simply fever. It is not a neurosis, it is not a phlegmasia, and however similar or closely allied the febrile diathesis may be to any other diathesis, it has its own unmistakable characteristic."

Dr. P. denies the impossibility of two diseases, whether relevant or not, affecting the system at the same time, and the supposition that, by a sort of antagonism, they destroy each other. "So common," he remarks, "is the reverse true, that a purely simple form of disease seems the exception rather than the rule.

"As regards fevers when prevalent in a particular locality, the utmost confusion of types and grades is often witnessed. Some are intermittent, others remittent, others from the potency of the cause present the continued form. The intermittent becomes malignant, congestive, remittent, continued, typhoid. What appears sporadic to-day, is to-morrow epidemic. A similar interfusion of types obtains in the second form—continued fever—as under the first. The simple pyrexia, if long continued, seldom retains its simple character, and as the severity of the affection increases, the simple fever becomes a typhoid, or perhaps a typhus."

There is, Dr. P. admits, a marked and essential difference between the types of continued fever, resulting from a difference in the state of the system and intensity of the cause, but not in the nature of the latter or of the disease. "It frequently happens," he remarks, "that of a large number of persons subject to the same influence, a part will suffer from typhoid, and a part from typhus." This we have witnessed in repeated instances, and Power, as quoted by Bartlett, states that, "on the Rio Grande, a vessel which imported seventy cases of typhus had also many cases of typhoid." The origin of the two forms may frequently be traced to the same locality. They both appear epidemically. "The typhoid," says Dr. Christison, "has repeatedly appeared and disappeared, as a subordinate or intercurrent epidemic on the more general epidemic of typhus."

A similar interchange or blending of types is also of occasional occurrence among the different eruptive fevers. Thus, scarlatina may occur attended with catarrhal, and measles with anginose symptoms. Scarlatina may appear during the convalescence from measles. The two diseases may appear in some of the members of a family in their distinct forms, in others, so blended and confounded together in the same patient, as to render it impossible to say that either predominates. In other cases the attack may commence as scarlatina and terminate as measles, or the diseases may alternate with each other in the same patient, on different days. Nor is this blending of types confined to fevers of the same class; the phenomena of any two classes may appear in the same case. The periodic or the eruptive may assume the continued, and the continued the intermittent or remittent form, etc.

> "I do not by any means assert," says Dr. P., "that the state of the system is the same in all forms of fever. The state of the system differs widely in its departure from the standard of health when a single organ is diseased, from what it is when this diseased action engages every organ in the body; but it is a difference in degree not in kind. So, when those causes which act primarily upon the nervous centres, produce a periodic fever, the state of the system is far different from what it is when, as a result of this disturbed action, the blood becomes involved; and in the incipiency of this change, again, from what it is when the blood becomes so altered by disease as to give rise to the maculæ of typhus or the black vomit. But these are differences in degree only. On this ground, *conversion* of type is not only possible, but capable of explanation." "In the periodic fevers, as the blood becomes involved, the peculiar nervous symptoms disappear, and the symptoms peculiar to blood fevers become manifest. The depraved blood now becomes itself a cause sufficient to complete the process of innervation.
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> "Nor does this supposition, that types *may* depend upon changes wrought in the system as the direct result of the disease, conflict at all with the idea that special causes are productive of particular forms of fever, as typhus from the decayed wood of ships, or the accumulation of filth on board, or decayed fruit. It is quite as easy to comprehend how the effluvia from these various sources may depress the vital powers to a given degree by destroying the integrity of the blood, as that the same identical poison should be generated from them. Indeed the search after specific causes for results which may be rendered so infinitely various through the agency of the vital forces has, so far, served to create difficulties rather than remove them. I cannot see the propriety, much less the necessity of asserting, when a case, beginning as a bilious remittent, 'puts on all the appearances of maculated typhus,' that there has been superadded to the cause of the remittent the *peculiar poison* of typhus. That the milder forms of fever are predisposing causes of the more severe, is generally admitted. The same agents which produce the milder attacks, acting in conjunction with the fever, become increasingly potent depressing agents as the power of resistance in the vital forces diminishes, and may of themselves occasion a change of type. A new deleterious agent may in the same manner, in addition to its own special influence, give potency to previously existing causes, and so hasten the transition from one type to another. I cannot admit, therefore, until it can be satisfactorily proved, that a peculiar form of fever can arise only as the result of a special poison—the conversion of type is occasioned alone by one poison overpowering or supplanting another."

The next report is on a new principle of diagnosis in dislocations of the shoulder-joint, by Dr. L. A. Dugas, of Georgia.

We invite a careful perusal of this interesting paper, on the part of those engaged in the practice of surgery.

The new principle of diagnosis set forth by Dr. Dugas is thus shortly defined by him in the outset of the report:—

> "If the fingers of the injured limb can be placed by the patient or by the surgeon upon the sound shoulder, while the elbow touches the thorax, *there can be no dislocation;* and if this cannot be done, there *must be* a dislocation. In other words, it is *physically impossible* to bring the elbow in contact with the sternum or front of the thorax if there be a dislocation; and the inability to do this is *proof positive* of the existence of dislocation, inasmuch as no other injury of the shoulder-joint can induce this inability."

To this report succeeds one by Dr. Hamilton on deformities after fractures. It is the third report on that subject the gentleman has presented to the

Association. The same valuable characteristics distinguish it as did the two preceding ones. It presents a mass of materials adapted for the solution of a most important problem; to determine, namely, the degree of success to be reasonably anticipated in any given case of fracture, from the careful and skilful application of the most approved methods of treatment now in use, and the causes inherent in the circumstances of the case or of an accidental character, by which a perfect cure is impeded, or our best efforts to produce this desirable result are rendered necessarily or probably a failure. While the knowledge that certain fractures, let the surgeon do his best, will, in numerous instances, entail more or less permanent deformity or inconvenience upon the patients in whom they occur, and that in other cases the same result may be brought about by various contingencies over which the surgeon has not entire, if any, control, does not stand as an impediment in the way of any well directed effort at improvement in the management of these accidents, with the view to render their cure in all instances more certain, and, in a larger number of cases than is at present attainable, complete and perfect; it enables the surgeon to arrive in cases of fracture at a clear, but at the same time cautious prognosis as to their final result, and this presented to our courts with the facts, if necessary, upon which that prognosis is based, will do away with the grievous wrong that has been too often inflicted upon skilful and faithful practitioners of surgery by the verdict of juries in suits for damages on the plea of injury sustained from malpractice.

The report of Dr. Hamilton does not admit of analysis, and we hesitate to offer any remarks on either of the surgical questions embraced in it.

The remaining reports, with the two prize essays contained in the volume before us—the report, namely, On the Nervous System in Febrile Diseases, by Dr. H. F. Campbell; the prize essay by the same gentleman, On the Excito-secretory System of Nerves; and the prize essay of Dr. W. A. Hammond, On the Nutritive Value and Physiological Effects of Albumen, Starch, and Gum, have been already noticed in a previous number of this Journal.

D. F. C.

ART. XVIII.—*Outlines of a Course of Lectures on the Principles and Practice of Surgery, delivered by* E. GEDDINGS, M. D., Professor of Surgery in the Medical College of the State of South Carolina. Prepared by THOS. S. WARING, M. D., and SAMUEL LOGAN, M. D., from notes taken during the course. Published with the consent of, and revised by, Professor Geddings. Charleston: Courtenay & Co., 1858, pp. 560.

THE recent journals have announced the retirement of Professor Geddings from the chair of Surgery, which he has so long and so honorably filled in the Medical College of the State of South Carolina. Whilst, therefore, we regret the withdrawal of so distinguished a teacher from the high post which he has occupied, we are the more disposed to receive with eager welcome the volume now presented us: the outlines of the course of lectures which Professor Geddings has been in the habit of delivering before his class.

The notes from which this volume has been compiled were taken by Drs. Logan and Waring, during their course of attendance upon the lectures. At the same time, the matter therein contained has been submitted to the inspection of Dr. Geddings, and we are assured by him in his preface:—

"That the notes, as far as they extend, represent a fair and faithful exposition of the facts and principles of surgery, which it has been my endeavour to teach for several years. Fully sensible of the glaring deficiencies of the work as a whole, I nevertheless hope that it may prove useful to my pupils, as furnishing an outline of my course of lectures, which they can fill up while listening to my instructions, and that amongst our numerous *alumni* it may recall associations upon which I, at least, shall always look back with pleasure. I have no ambition that it should aspire to anything more."

The general division of the course is threefold. In Part First are included general surgical diseases: that is to say, all affections of a strictly constitutional origin, accompanied or not, as the case may be, by local complications, as in the various forms of inflammation and in syphilis. Part Second is devoted to the consideration of truly structural affections: such diseases and accidents as are particular in kind, but yet occur in various portions of the body. In this classification are included fractures, dislocations, aneurisms, amputations, ligations of arteries, and wounds. Regional or topographical surgery embraces all injuries and diseases of a strictly local character, as concussion, compression, hernia, hæmorrhoids, etc.

The earlier lectures of the course are occupied, according to the usual custom of teachers of surgery, by an elucidation of the doctrines of inflammation and its products, and by forcible and clear directions relative to the treatment to be pursued in each specific case. In reading over the chapters in which are described the different varieties of ulcers, our attention is arrested by the treatment advised by Dr. Geddings. It will be remembered by our readers that Mr. Skey,[1] of London, has, upon one or two occasions, insisted strongly upon the administration of opium in the treatment of indolent ulcers, attributing to "this remarkable drug the property of promoting the formation of healthy granulations on a surface that, notwithstanding all the previous appliances of surgery, is yet flat, pale, and ungranulating." In producing this result, Mr. Skey believes, however, that little merit is due to the sedative agency of the opium, but he claims, rather, that it possesses the power of rousing into healthy action the dormant capillary system. A similar plan of treatment, conjoined at the same time with plaster strapping, is also recommended by Dr. Geddings, who observes of the irritable sore: "I would here remark that I consider it *absolutely necessary* that in this species of ulcer the narcotics should be used at night in *large doses*;" and in summing up the method to be pursued when dealing with the ulcer of the indolent form, he adds: "And I would now repeat a remark, already made, that the peculiar invigorating effect of a large dose of opium will be found of the utmost advantage."

In the lecture upon erysipelas, Dr. Geddings objects to the usual definition of this disease, and informs us that the divisions and subdivisions commonly made by writers are so complicated and disconnected that they tend only to render the subject unintelligible. By erysipelas, Dr. Geddings means simply "an *exanthematous affection*, as described by authors on cutaneous diseases, this being accompanied by certain constitutional derangements." To this affection alone does he apply the term erysipelas vera, whilst all other varieties, including also the phlegmonous form, are classed under the sufficiently comprehensive appellation "pseudo-erysipelas;" at the same time, they are regarded as "entirely distinct diseases." We must confess that we cannot discern any advantage to be derived by discarding terms so widely used and so generally understood, and by the substitution in their stead of that most vague and meaningless epithet "pseudo-erysipelas."

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[1] London Lancet, April, 1855.

The essay upon syphilis, from the pen of Dr. Logan, embracing as it does more than forty-pages, strikes us as one of the most valuable chapters in the work. The doctrines of the eminent French and English syphilographs are ably and impartially reviewed, and in the all important matter of the treatment of this formidable disease, the chief indications are broadly laid down. We know of no American abstract of equal size upon this subject, from which the student can glean a greater amount of practical information.

In commencing the subject of structural affections, Dr. Geddings proceeds first to the consideration of fractures. The predisposing and exciting causes, the formation of callus, the process of repair, and the general plans of treatment, are placed before the student in detail. The lecturer then passes to the study of each individual accident. From the treatment of the fractures of both bones of the forearm, as advised at page 168, we would, however, dissent. We are told:—

> "Apply a compress the whole length of the forearm in front, having first put on a tumefaction bandage quite loosely; then taking two splints, apply one behind, long enough to extend from below the elbow to beyond the knuckles, and the other in front, extending from the elbow to the ends of the fingers; and secure these by bringing the roller down over them. The splints should be wide, in order to prevent the roller from compressing the forearm, and you should be careful so to apply the anterior splint as to prevent it from rubbing the arm at the elbow."

We cannot appreciate the advantage to be derived from the use of the above described tumefaction bandage. Applied "quite loosely," it could certainly be productive of little good as an antiphlogistic agent; and if rendered sufficiently stringent to produce pressure, could only endanger the future integrity and usefulness of the limb. It will be observed that whilst the surgeon is directed to apply the tumefaction bandage, he is at the same time enjoined carefully to avoid all lateral pressure with the outer roller.

The following description, also, which is given of Desault's apparatus for fracture of the thigh, as modified by Dr. Physick (whose name, by the way, in common with many other proper names, is often misspelt in this work), seems to us to be somewhat inaccurate:—

> "Here, first, we have Desault's apparatus, as modified by Dr. Physick; it consists essentially of three splints, one to be placed on the inner side of the thigh, and extending from the perineum to the foot; one on the front of the thigh, extending along its whole front aspect; and the third on the outer side, and extending from the axilla to beyond the foot. The upper end of this long splint is surmounted by a crutch-head, to rest against the axilla. At its lower end is a projecting block, over which a handkerchief, which has been previously attached around the ankle and to the foot, is to be passed and secured to the lower end of the splint, by which means extension is to be kept up. If you will bear in mind the flexible nature of the spinal column, and the constant inclination of the patient to bend toward the opposite side, you will at once see that the proper extension could not be kept up."

In the above passage, it will be observed that all reference to the counter-extension by means of the perineal band has been omitted; and the apparatus, as modified by Dr. Physick, is charged with an offence of which we are convinced it is guiltless; for of all the appliances to be used in the case of a fractured femur, the one in question is, in our belief, least open to the charge of faulty extension.

Having finished the subject of fractures and dislocations, Dr. Geddings next passes to the study of the diseases and injuries of the joints, and to anchylosis. In connection with the treatment of the last mentioned affection, the lecturer embraces the opportunity of paying a well merited tribute to Dr. J. Rhea Barton, of this city, who first devised and performed the operation of resection in cases of true bony anchylosis; an operation which, despite the condemnation expressed by Mr. Cooper and M. Sanson, is fairly entitled to be considered as one of the most valuable contributions to modern operative surgery.

The chapter on amputation is composed, as we are informed by Dr. Logan, entirely of extracts from Professor Geddings' article on amputation in the *American Cyclopædia of Medicine and Surgery.* The different methods of amputating, and the after-treatment, are minutely entered into, and plain and practical directions are laid down relative to the operation in each peculiar locality. As a general thing, the operation by the formation of flaps is the one preferred by Dr. Geddings, as being quicker, less painful, and more easy of performance.

The various forms of wounds, and the treatment of hemorrhage, are next presented to the reader. In the arrestation of bleeding, we notice that, under certain circumstances, Dr. Geddings prefers the use of animal ligatures. Thus, at page 306, we read:—

> "The only kinds of leather now used are soft doeskin, chamois leather, and French kid. These animal ligatures do not, like silk, act as foreign bodies, and, therefore, when using them, we are not obliged to leave one end out, but can cut both off close to the knot and leave the loop to be absorbed. This very circumstance constitutes an objection to their employment in the ligation of the larger vessels, as the ligature is apt to be absorbed *before* the adhesion of the inner walls of the vessel has taken place, which would allow of a secondary hemorrhage, in some instances exceedingly troublesome to manage. But when the vessels are small, as their obliteration takes place more speedily, and the force of the circulation is not so great, you will find the use of animal ligatures very advantageous."

In the 43d and 44th Lectures, the nature and treatment of aneurismal tumours are dwelt upon, and the various modes of interrupting the current of the circulation on its route to the diseased parts, explained. The procedure by compression is regarded as by no means satisfactory. We quite agree with Dr. Geddings in believing that, in the majority of instances, the application of compression upon the cardiac side of the tumour is insufficient to effect a cure. We believe, moreover, that, unless the greatest amount of care be exerted as to the precise site and direction of the compressing power, the effects produced will often prove rather disastrous than beneficial, by the interruption of the venous return; especially is this liable to be the case in dealing with popliteal aneurisms. Ligation of the artery is undoubtedly a far more certain, and, we think, also a far safer resort.

There is, perhaps, no portion of the volume before us which is written with more spirit, or which could have been more vividly expressed from the professor's chair, than the passages relative to injuries of the head. Evidently fully impressed with the importance of the topics he was handling, the lecturer has expressed himself to his class in such manner as must, we conceive, have left a lasting impression upon the minds of his hearers. As a specimen of his style, we subjoin a paragraph in which the treatment of concussion is summed up.

> "Let us now consider what may be our duty when we meet with a case of recent injury presenting some of these symptoms. You are called in a hurry to a patient who has just received a fall or a blow, and you find him in this

state of collapse, cold and senseless, with a slow and feeble pulse, and breathing heavily and slowly. What are you to do? I tell you you are to do but little; *the world* say differently. A young surgeon is not unfrequently considerably embarrassed under such circumstances by the ignorant crowd around, who always cry 'bleed,' 'bleed' into his ears. Why should you? I would inquire. There is no hardness of pulse, no height of action; the vital functions are indeed below par. I say, keep your lancet in your pocket; remove the neckcloth, or any other article of clothing which may impede the respiration; apply warmth to the extremities and the surface of the body; administer a dose of ammonia, and use all means of bringing up the system to its natural state of activity, instead of pursuing those measures that will reduce it still lower. Bleeding, in such a case, would be madness. You must apply sinapisms to the extremities and body, and administer stimulants by the mouth, if the patient can swallow, and if he cannot, you should resort to an enema of an exciting character. A half ounce of the oil of turpentine, rubbed up with two or three eggs and a pint of warm water, will be found a very useful expedient in such cases. By this treatment, you may succeed in bringing on the symptoms of reaction. These I have already enumerated; and the question now presents itself—what are you to do in this stage?"

In the 59th and 60th Lectures, the diseases of, and the operations upon, the air passages are presented to us. Considering the vital importance of the affections of these regions, it does not appear to us that the sketch with which we are furnished is very full in its details. Especially would we be inclined to criticize the hasty manner in which the all-important operation of tracheotomy, and the circumstances demanding its performance, are passed over; the operations of bronchotomy, so easily accomplished upon the cadaver, and so difficult in reality, are certainly those with which the student should be rendered most familiar.

Laryngotomy in croup, so often, unfortunately, the last and failing resort, has not, in the hands of Dr. Geddings, afforded any satisfactory results. He tells us that he has *never* succeeded with it, thus chronicling one more series of failures to the list already so long and fatal.

To the discussion of the various forms of herniæ, three lectures are devoted, whilst the subject is more elaborately dealt with, especially in an operative point of view, in an essay of twenty-five pages from the pen of Dr. Logan. The succeeding twenty pages are then occupied by Dr. Waring with an article describing the various affections of the anus, and of the fistulæ of the bladder in females. Dr. Waring takes a most despondent view of the result of surgical interference in cases of vesico-vaginal fistula.

The processes recommended are by no means those most frequently adopted, at least in this country, and we regret to see that the ingenious operations of Drs. Marion Sims, of N. Y., and Bozeman, of Alabama, are not even alluded to.

The 65th Lecture comprises a full account of hydrocele of the tunica vaginalis testis. The origin of this disease is, according to the experience of Dr. Geddings, traceable, nine times out of ten, to inflammation about the prostatic portion of the urethra.

In the tenth essay, the account of the diseases of the genital organs is continued by Dr. Waring. The greater portion of this carefully written article is devoted to the description of gonorrhœa in the male and female, and to the different modes of managing stricture.

The final lectures of the course comprise the history of the presence, formation, and treatment of vesical calculi. The lithotriptic instrument of Jacobson is the favourite one of Dr. Geddings; he prefers it to all others, believing that with it the stone is more easily detected, and, when found, more easily crushed. In the operation of lithotomy, there is no mode proposed for entering the bladder through the perineum, which ranks higher in the judgment of Professor Geddings than that of Professor Smith, of Baltimore. He believes it to be free from all danger of hemorrhage, and almost infallible.

We have thus endeavoured, in our limited space, to give our readers an idea of the general nature of the volume before us. It is not presented as an elaborate work upon surgery, but merely as a résumé of the lectures which Professor Geddings is in the habit of delivering to his class. We may now look upon it as a parting gift to the alumni of the institution with which the lecturer has been so long and so usefully connected; and we feel confident that they will always regard it as a most valuable legacy.

We regret that we cannot speak in favourable terms as to the mechanical execution of the work; the typographical blunders are so numerous as to materially detract from the value of the book. We trust these will be properly attended to in subsequent editions. J. H. B.

Art. XIX.—*Rational Therapeutics; or the Comparative Value of Different Curative Means, and the Principles of their Application.* "Naturâ Duce." By Worthington Hooker, M. D., of New Haven. Prize Essay. 8vo. pp. 70. Boston, 1857.

The theme of Dr. Hooker, in the essay before us, which received the prize from the Massachusetts Medical Society, is thus expressed by that society in their offer to competitors: "We would regard every approach towards the rational and successful prevention and management of disease, without the necessity of drugs, to be an advance in favour of humanity and scientific medicine." This proposition being an extract from the address of Dr. A. A. Gould, delivered before the Massachusetts Medical Society at its annual meeting in 1855.

Strictly speaking, the essay is an inquiry into the nature of medication in the removal of disease: an examination of the questions: Is there any virtue in physic? Is medicine, as a science, based on well established truths? Is it competent, by its therapeutical appliances, to moderate the severity, to arrest the course, and to prevent the fatal termination of disease?

Now these questions, though not probably in the same formal manner as they are here put, have been repeatedly asked, and very different replies have been given to them. It is well known that among the most distinguished members of the medical profession, there have been, and still are those who possess no faith in the curative energies of nature; who deny to the animal organism the slightest recuperative power when labouring under disease, the tendency of which, they maintain, is invariably destructive, and who, therefore, believe that a poor physician or a doubtful remedy is, in every case of illness, far better than none. There are others, on the contrary, who consider that Nature herself is all sufficient for the cure of disease; that active interference on the part of the physician is, in the general run of cases, not merely useless, but often positively injurious, by impeding and disturbing the efforts of the organism to subdue whatever abnormal action or condition it may be labouring under.

With neither of these parties does it seem to us that truth resides; and to the same conclusion Dr. Hooker has arrived in the essay before us.

We have entire confidence in medicine both as a science and an art. We admit all the improvements that have been derived from the accumulated observations of the entire profession in times past and present, as carefully collated and translated by the matured intellects of the profession of our own day; whether these improvements have reference to our acquaintance with the nature, causes, progress, and tendency of disease, or in the application of remedial agents for the relief of the suffering consequent upon its presence, or for the preservation of life from its destructive influence. But while we avow our belief in the foundation in truth of medicine as a science, and hold that there is virtue in medicine, we cannot, whenever we see diseased action cease, and a state of health ensue, give to the remedies alone that may have been employed, the credit of having brought about this happy change. We much doubt whether medicine alone is competent, in very many cases, of arresting the progress, and thus shortening the duration of disease.

We hear much of certain maladies being cut short or aborted, as it has been termed, by this or that remedy or by some particular plan of treatment. Does this really take place, and if so, how often? There are strong reasons for suspecting that a mistake is made when the physician is supposed to have succeeded in the sudden arrest of morbid action, and the immediate restoration of the diseased organ or organism to its normal, healthful condition. In some few cases, it is probable that, by judicious, well timed treatment, the onset of disease may be prevented, even when its occurrence has appeared to be imminent. But even in such cases the sources of deception are so numerous, that it would be somewhat presumptuous to decide too positively as to the probability of an attack of disease occurring or in regard to the extent of our agency in its prevention.

Most diseases will be found to run a certain course—not the less determinate because occupying more or less time in different cases. That this course is but slightly, if at all, interfered with by the most active and best directed treatment, every one may become convinced by a very little careful observation. Even in the acute local inflammations this statement will, we believe, be found equally to hold good as in those continued fevers which are acknowledged by most pathologists to run their course in despite of every effort made for their arrest. The physician has it in his power, most unquestionably, to reduce, by a judicious course of treatment, the intensity of diseased action, and thus to guard the organs and tissues from its disorganizing influence; he has it equally in his power, in many cases, to prevent the extension of disease from organ to organ and from tissue to tissue, and in doing this he appears actually to shorten its duration, while all that he has in fact accomplished is to reduce the violence, limit the destructive effects, and confine the location of the morbid action to a single or a few organs.

It may be said, that if we confess the inability of the physician with all the resources of modern therapeutics at his command, to arrest the course of disease, or to shorten materially its duration, and more especially if we admit the living organism to be endowed with the power of controlling or subduing morbid action, this is tantamount to an acknowledgment of the worthlessness of the so-called healing art. But no one, we suspect, would apply this kind of reasoning to disprove the good that may be effected by a judicious recourse to remedial agents in the exanthematous fevers—diseases that are known to have a determinate course, their several stages having a regular succession, and occupying each a definite period of time. No observing physician will deny that, in cases of variola, varicella, measles, scarlatina, and other acute eruptive affections, medical treatment, although it will not cut these diseases short, or materially lessen their duration—that although, in truth, it will not affect their cure, is nevertheless eminently useful—that by it the sufferings of the patient may be allayed or mitigated, the occurrence of serious or troublesome complications guarded against, and the safe passage of the disease, through its several stages to a favourable termination, materially aided. Now what medicine is able to effect for the exanthematous fevers, it is equally able to effect for every other disease. In respect to many, it is competent to do even more; that is, by a proper prophylaxis to prevent their occurrence, or to render them when they do occur so mild in their character as to be without danger.

But the good to be effected by medicine is not to be attained by turning Nature out of doors, as Rush boldly expressed it, but by aiding, supporting, and guarding from impediment or disturbance her efforts to bring back from their disordered conditions the several portions of the living organism to their normal character and rhythm, and to restore to its proper state the organic condition of every tissue which has experienced the ravages of disease.

According to these views, rational therapeutics will consist in watching nature, and, in the selection and use of our remedial measures, following out strictly her indication. In the words of Dr. Hooker, in the essay before us:—

> "The most important of all 'our curative means,' is the recuperative power of nature. All our means of art have little influence in comparison with this. Well is it said by Sir Gilbert Blane, that 'the benefit derivable to mankind at large from artificial remedies is so limited, that, if a spontaneous principle of restoration had not existed, the human species would long ago have been extinct.'
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> "But why do we call this recuperative power *our* means of cure? Because we can use it. We can modify and direct its efforts; we can remove obstacles out of the way of its action; we can put the system into a condition to receive the full benefit of its efforts. A large part of the physician's duty is thus to be waiting upon nature; and, even when he uses active measures, they must commonly coincide with her efforts, or they will do harm. It is seldom that he is called upon to go counter to her operations, and then only temporarily.
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> "This is *our* means of cure much in the same sense that the wind is the sailor's means of bringing his ship safely into harbour. With his appliances, he so adjusts his vessel that this natural power shall effect the purpose, as the physician adjusts the circumstances of his patient so as to let the natural powers in his system carry him safely into convalescence. The comparison might be followed out, without bordering in the least upon the fanciful, in other particulars; but they are so obvious that it need not be done."

It was by Cullen, as Dr. Hooker has very correctly remarked, that the art of "curing by expectation"—the non-interference practice of those who preceded him—was formally denounced, and the comparatively inert and uncertain medication that prevailed during the first half of the eighteenth century replaced by one of a more definite and decided character, and from which was deduced by the physicians of Great Britain and the United States (by the larger portion of whom the doctrines and practice of Dr. Cullen were embraced), the therapeutical axiom that it was the bounden duty of the medical attendant, with as little delay as possible, to attack, overcome, break up, and rout, as it were, disease from the system of his patient, and by the most active and energetic remedial agents at his command.

The reign of this active, perturbative medication reached, according to Dr.

Hooker, its culminating point somewhere in the first quarter of the present century. Since that period, it has been manifestly declining, and this decline has kept equal pace with the prevalence of the more correct views that have been gradually developed during the past twenty or thirty years, in relation to the pathology of disease, the operation of remedies, and their actual agency in the amelioration, arrest, and removal of disease.

Some would ascribe the modification of treatment referred to above altogether to a change that has taken place in the character of diseases generally, they having assumed, it is supposed, a more asthenic form than they exhibited in the days of active medication.

> "But," in the words of Dr. Hooker, "the reality of this change is questioned by many who are quite as reliable observers as those who assert that it has occurred; and their view of the question certainly has some show of reason if we consider the agencies which are necessary to the production of so great a change as has been claimed to have taken place; for observe, that it is not a change in the character of any particular diseases, and from one season to another, but it is a change covering a long term of years, and in the general diathesis of disease. This, it is asserted, is much more disposed to be asthenic than it was in the days of active medication. The fact, so distinctly observed by Sydenham, that epidemic diseases thus change from year to year, from a modification of some of the concurrent causes that produce them, has been well established by the observation of physicians since his time. But the change under consideration is altogether different from this: it is a change which could not be produced, unless a continuous influence of some considerable power were exerted, during a series of years, alike in healthy and unhealthy seasons, when epidemics were rife, and when they were mild, or even absent, modifying the action of the common causes of disease, so as to alter its general character in all its forms. And, besides, to effect so great a change as has been asserted, so abruptly and so thoroughly, some alteration in the very character of the human system would seem to be required.
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> "It appears clear, then, from these considerations, in addition to the fact that the reality of the change is matter of dispute, that there cannot have been an alteration in the general diathesis of diseases sufficient to account for the great and general change in medical practice that we have witnessed in the past twenty-five or thirty years."

In a consideration of the several particulars in which this change has been manifested, Dr. Hooker notices the modifications that have taken place in the use of mercury as a remedial agent—its entire discontinuance, in fact, in cases in which it was formerly largely employed: thus, in fevers, in the treatment of which it was at one time considered an important, if not an essential remedy, it is now very sparingly used, and only so far as it is needed to affect the secretions, or to combat accompanying inflammations. Its use is also discontinued in the treatment of the exanthematous diseases, unless when some special reasons in the complications of these diseases call for its employment.

"It has come to be the settled practice of the profession to avoid its use in all cases where the distinctive effects of this drug are not called for."

> "The same discriminating experience which has discarded mercury as a general remedy in fever, and in the exanthemata, has retained it in the treatment of inflammations; but it has been found that it need not be pushed to the extent that was formerly supposed to be necessary in this class of diseases. In most cases, it is not necessary even to affect the gums, and salivation is always to be avoided, although, in some severe cases, it is proper to run the risk of producing it."

In chronic diseases, mercury is now used with far more reserve and caution than formerly.

"In very many cases in which it would formerly have been deemed applicable, it is now given up, as calculated only to add to the sufferings of the patient without effecting any good result, or to leave him in a bad condition after the cure of the particular disease for which it is used is accomplished, or even to prevent a cure which might have been effected if more gentle means had been employed."

"Emphatically may it be said, in view of the sad results which have come from the needless use of mercury, that the great diminution of its use in the treatment of disease is 'an advance in favour of humanity and scientific medicine.' At the same time, it is to be borne in mind that it is far from being a mere general diminution. It is a diminution which is based upon an extensive range of discriminations; so that, while in some cases where it was formerly used it is now wholly discarded, and in others it is used with much less freedom, there are some cases in which its introduction into the system is effected as rapidly as possible; and cases occasionally occur in which there is some reason to think that it is proper to use it in exceedingly large doses. This last point, however, is as yet *sub judice.*

"Some of the most valuable acquisitions which the profession has made in therapeutics during the present century, are the discriminating limitations that it has been able to put upon the use of this remedy, which is one of the most efficient of its active means of cure. The advance which has been effected in this respect, step by step, in the profession's experience, is greater than is ordinarily supposed. Larger additions have in this way been made to our real means of cure than by any, or even perhaps all, of the new remedies that have been discovered during the same period of time."

All disturbing remedies, Dr. Hooker shows, are much less in vogue now than formerly. Some thirty years ago, they were very commonly used, especially in the beginning of attacks of disease, for the purpose of breaking up the attack, or of lessening its force. So common was the plan of thus adding to the turmoil of disease at the onset, that it was a popular saying, that it was necessary to make one worse in order to make him better. This disturbing and depressing mode of treatment was by no means confined to the beginning of disease, but it was customary to continue it to some degree during the progress of the case. Now, however, the general character of medical practice is vastly different. In comparatively few cases, even of acute disease, is the patient made worse at the beginning, in order to make him better subsequently.

"Generally, he is made better at once by measures that relieve the disturbance of disease instead of adding to it; and during the progress of the case, great caution is exercised in the use of any remedies that may interfere with the rest and quiet so essential to the free operation of the recuperative powers, or that may so depress them that they cannot act with sufficient energy to effect a recovery. The truth that the irritation of disease is often the great source of the exhaustion attending it, and that the physician should therefore be careful not to add to it by his remedies, is now quite fully appreciated."

"The change of which I have been speaking," observes Dr. Hooker, "has done for medicine what the introduction of the art of healing, by the first intention, has done for surgery. The irritation of the disturbing modes of treatment so prevalent during the reign of active medication, had the same effect upon internal maladies that the irritating ointments had upon the wounds into which they were inserted so universally by surgeons before the time of Ambrose Paré; and the improvement in both cases consists in a return to the simplicity of nature."

The remarks of Dr. Hooker on the changes that have occurred in respect to the employment of bloodletting are pertinent and just. The following is replete with truth.

"Bleeding, it is to be remembered, is a remedy that is calculated to allay

> the irritation of disease; and it never adds to it when it is really applicable, and is not made use of to an improper extent. It is, therefore, in some cases, really not as objectionable as certain remedies that are substituted for it in order to avoid exhaustion. It is often better to reduce febrile excitement or inflammation by this quiet remedy than to do it with remedies that may exhaust the vital energies by a series of impressions which are depressing, and, at the same time, irritating."

It is an unquestionable fact that, during the last thirty years, there has gradually taken place a most important change in our mode of managing disease. Promptness and boldness in the employment of the most active remedies are no longer considered as the proper characteristics of the most able and skilful practitioners. Few well instructed and experienced physicians of the present day are inclined to boast of their success in cutting short, suddenly arresting, or making abort disease. It is unquestionably true, also, that our plans of treatment are far more simple than those pursued during the first quarter of the nineteenth century, that they inflict less inconvenience and distress on our patients, and seldom prolong the period of convalescence by the continuance of their morbid effects long after the disease for which they were given had disappeared.

It is very certain that, in the treatment of all diseases, much greater prominence is given now than formerly to the class of quieting means and measures. "Disease is ordinarily accompanied by turmoil and suffering. These it is important to allay in order that the recuperative power may act easily and effectually." "In the reign of active medication," says Dr. Hooker, "it was common to speak slightingly of palliative remedies in distinction from those which were supposed to be radical in their influence upon disease."

> "There is no truth better established than that whatever palliates has, in doing this, a tendency to cure, and, taking into view the whole range of disease, quieting and comforting influences have more to do with effecting recovery than those which are disturbing. Even the remedies which for the moment disturb, often do more towards the cure, by the relief which they at length afford to disturbance or suffering, than by any direct effect which they have upon diseased action. This may be said of all remedies that remove sources of irritation. And the lighter means of contributing to the relief and turmoil of and distress of sickness are not to be neglected. Refreshing influences acting upon the morbid sensibilities, genial mental influences, even so small things as the smoothing of a pillow, often contribute much to the recovery, and are sometimes essential to it.
>
> "The judicious application of these is often neglected, while the physician is busied with the administration of remedies, the operation of which is perhaps involved in obscurity. The most successful practitioners are those who take the simplest views of diseases and their remedies, practising according to the dictates of a good common sense, taking that term in its highest meaning. On the other hand, those who are captivated with recondite views of the *modus operandi* of medicines are unsuccessful practitioners."

To the judicious and cautious practitioner, the most simple means are the best.

> "Cold water, which can be used so extensively and so variously, is to him a remedy of greater value than any drug that can be administered. He makes much account of such matters as friction, external applications of various kinds, the regulation of the temperature of the room, of the amount of clothing, ventilation, cleanliness, &c. He attends also to the mental influences that are brought to bear upon the patient. He does not consider himself the mere doser of the body; but he regulates the mental doses, so to speak, that are administered, sometimes considering these of more importance than the drugs that he gives. He feels bound to take charge of everything that can in any

way affect the case, and is satisfied with nothing short of absolute control of the sick-room."

All this is, doubtless, highly commendable; but there still remains unanswered a most important inquiry. Are the changes that have taken place in therapeutics to be welcomed as a positive "advance in favour of humanity and scientific medicine?" It is constantly to be borne in mind that the physician, besides the mere amelioration of suffering, the mere soothing of the pangs of disease, the abatement of its inconveniences, has a still higher and more important mission—the preservation and prolongation of human life, with the free, active, and comfortable performance of all its functions. Have the changes in our plans of medication promoted or retarded this great object and end of medical science and practice? This, after all, is the only true criterion by which the value of the asserted improvements in therapeutics is to be tested.

We regret that, in the absence of the necessary statistics, the above question cannot be answered in the positive manner its importance demands. So far as the imperfect data in our possession enable us to form a judgment, this is decidedly in favour of the greater efficacy of modern therapeutics in the preservation of human life from the ravages of disease. If, with Dr. Hooker, we include under the head of therapeutics the means adapted to the promotion of the health and vigour of the human system, and to the prevention of disease, improvements in drainage, domestic and civic cleanliness and ventilation, habitations, food, clothing, &c., then we have the most positive evidence that, at the present day, the value of life is far beyond what it was at any former period; that, within the present century, its average duration has been very decidedly increased. We know, too, that in several of the large cities in Europe the annual ratio of mortality has been greatly diminished, and we feel confident that the records of our profession, and the experience of every one who has been for many years engaged in extensive practice, will show that many forms of disease which were formerly ranked as among the most prominent outlets of human life, are now generally and readily conducted by the physician to a favourable termination. On every hand, it must be apparent that the changes which have taken place in therapeutics are to be viewed as actual improvements. It is very certain that physicians have acquired a better appreciation of the true value of remedial agents, and more correct views of their right administration in cases of disease, and that, in consequence, not only are their patients rendered more comfortable during the continuance of their sickness, but their ultimate restoration to health is effected with more promptness and certainty.

Dr. Hooker attempts to develop certain general principles by the guidance of which in the use of curative means the advance contemplated in the proposition which is the subject of his essay may be secured.

The first rule laid down by him is that *no active medicine should be used in any case, unless the evidence is clear that it will effect good.* This appears to us to be a self-evident proposition. Every one who has carefully studied the nature of disease in any one of its forms must be convinced that when there is no certainty that the administration of a remedy will do good, it must be productive of harm. The popular maxim, that a medicine which is not actually beneficial may, nevertheless, do no injury, is a most dangerous one to follow in the treatment of disease.

"Venturesome medication," observes Dr. Hooker, "is captivating, especially to the young and enthusiastic practitioner; and the charm is enhanced by the occasional brilliant achievements with which it is attended. Many of these achievements, however, are only apparent, being erroneously attributed to the remedies, when they are really the result of nature's efforts, and have been effected, perhaps, in spite of the agencies to which the credit is given. While the bold practitioner has this brilliant but often false show of success, the better results of the practice of the cautious physician commonly make but little display; yet, when he does attempt to produce decisive effects by his remedies, so definite is his aim, that the result may be calculated upon almost with certainty."

The second rule of Dr. Hooker is that *the practice in each case should be based mostly upon what we know of the modus operandi of remedies.*

"Even in case of remedies that have a definite and almost specific relation to certain diseases," remarks Dr. H., "their use is to be somewhat governed by other known effects of these remedies, and their relations to other morbid conditions; that is, in order to make their direct relation to disease always available, their *modus operandi*, in their direct influence, must be well understood. Thus, in giving quinine as an antiperiodic, we must have some regard to incidental circumstances in the case, which, from other relations of this remedy, may essentially modify, or even prevent, its desired action.

"I have said that the application of the general principles of therapeutics is to be greatly varied in individual cases, in obedience to their varying circumstances. Most of these circumstances are easily recognized; but some are discovered with difficulty, at least at the outset, and some are entirely hidden from view. These secret elements, existing in many cases, modify essentially the effects of remedies, and sometimes render improper the use of those remedies which the circumstances that are known in the case, taken by themselves, clearly call for. This suggests another rule of therapeutics, viz., that *we should be governed in our treatment of disease by the actual effects which we see our remedies produce.*

"It would take me into too wide a field to consider to any extent the causes which vary the ordinary action of remedies; but some of them it will be profitable to notice.

"The idiosyncrasies which we occasionally meet with are such causes. An idiosyncrasy may be such in relation to a remedy as to call for much larger or much smaller quantities of it than are usually given; or it may be such as to forbid the use of the remedy altogether.

"A variation of susceptibility under the influence of disease—a temporary idiosyncrasy, as it may be termed—is a much more common cause than the one just mentioned. The susceptibilities are always more or less altered by disease; and just in proportion to this alteration is that of the relation of remedies to the diseased condition. We see this strikingly exemplified in the large doses of opium which are borne in severe pain, and in the amount of cathartic medicine sometimes required in a torpid state of the bowels. These are palpable cases, familiar to the experience of every one; but physicians very generally are not aware how extensively the susceptibilities are changed in disease, and how wide a range of variation in the doses of medicine is required to proportion them accurately to the necessities of each case. It is a very common failure to give either too much or too little medicine. I am persuaded that, in chronic diseases, there is often much harm done by administering remedies, that are really appropriate in quantities, that make too decided impressions upon the system. In many cases, a succession of gentle impressions from a remedy will do good, when ordinary doses of it would produce so strong an effect as to be injurious. Both in acute and chronic diseases, there is, in the common practice of physicians, altogether too little variation in the doses of medicine to suit the different susceptibilities of patients, and probably the doses are more often too large than too small.

"There are some occult causes of disease which modify the action of remedies. This is especially true of epidemic diseases. Although our general principles of therapeutics, deduced from the ordinary relations of remedies to disease, are applicable in such maladies, we cannot act upon them as freely as we can in diseases that are open and clear in their character. There is something in the disease beyond what we see, modifying the effects of remedies often in an unaccountable manner. We must use the remedies that we deem appropriate, therefore, with great caution, watching their effects, and depending very much upon what we observe of them to guide us in the further use of the remedies. We may find that the unknown substratum so affects the relations of the apparently appropriate remedies as to make them mostly, if not wholly, inappropriate. The symptoms may be such, for example, as we very properly consider as calling for bleeding, and examinations after death may show a state of things that bleeding is ordinarily calculated to relieve; and yet that remedy may be really appropriate in but few cases, perhaps in none."

The three rules laid down by Dr. H. are unquestionably useful guides to the proper administration of remedial agents for the control of disease. The first and last of these rules are of unquestionable applicability. The correctness of the second of them will admit of question, or, perhaps, that it may convey the meaning intended by Dr. H., as shown in his commentary upon the rule, a slight change in its wording is required. With the *modus operandi*, strictly speaking, of but few of our leading remedies can we be said, with a due regard to truth, to be fully acquainted. Experience has taught physicians that certain remedies and plans of treatment, when given to a patient in particular forms, stages, and conditions of disease, are productive of beneficial effects. But as to the manner in which they act, the kind of impression they make upon the organism, the changes they produce in the condition and actions of its several parts, in order to bring about those effects, we are, in a great measure, ignorant. With some prominent effects of certain of our remedies we may speak with some degree of certainty; thus, we know that one class of remedies will purge, another vomit, another increase the urinary secretion, another the perspiration, etc. But, although from our knowledge of these facts, we are led to dispense with the several remedies referred to when we have reason to apprehend injury from one, at least, of their known effects, or to resort to them in cases in which we believe purging, vomiting, diuresis, or sweating, etc., may be productive of good, nevertheless, we cannot depend even upon the classification of remedies in the materia medica as a certain guide to direct us in the proper application in the treatment of disease. There is scarcely a single remedy in common use which does not possess properties, in addition to the leading one upon which its classification has been based, even more important than this, that will render their employment proper and peculiarly advantageous in forms of disease in which, judging alone from their place in the lists of the materia medica, they would seem to be absolutely contraindicated.

The fact is that, to secure the inauguration of a rational therapeutics, it is absolutely necessary that we should become more intimately acquainted with the actual curative effects of the remedies we employ, and their exact relationship to the several abnormal conditions to which the human organism is subject. This acquaintance can be acquired only by a long series of careful observations, submitted throughout to the strictest scrutiny, in order that every appreciable source of error may be detected and avoided—so that the true value of each article of the materia medica, with its applicability for the control of one or other of the forms and stages, and conditions of disease, may be clearly and accurately made out.

"The future improvement in therapeutics," says Dr. H., "is probably to be mostly in the same direction that it has been. Our resources are to be increased by multiplying their modes of application, more than by the discovery of any new resources. Some have indulged the hope that specifics of different kinds will be discovered for the cure of disease. Dr. Rush was wont to talk of the probability that some plant would be found that would cure consumption, and even lately, Professor Allison, in his *History of Medicine*, indulges in the anticipation that medicine will hereafter be much advanced by 'the discovery of specifics, which may counteract the different diseased actions of which the body is susceptible, as effectually as the cinchona counteracts the intermittent fever; citric acid the scurvy; or vaccination the smallpox.' But, strictly speaking, there are no specific remedies, though there are a few that approach to this character. There may be some yet to be discovered: but we have no reason to expect this from our past experience; neither have we reason to anticipate very much from the discovery of new remedies of any kind. While the search for them should by no means be discontinued, it is not worth while to expend labour here which may be more profitably expended in further observation of the relations to disease of the valuable remedies already discovered. The improvement in therapeutics, resulting from such observation, will probably be very much greater than it has yet been, for observation is all the time becoming more strict and accurate, and will increase greatly in these qualities if the profession came to be extensively governed in their medication by the principles that have been developed in this essay."

The principles thus referred to, or, at least, the chief of them, have been familiar to us from the earliest period of our professional career. By our medical perceptor it was strongly impressed upon us, as a leading rule in therapeutics, never to prescribe for *the name* of a disease, but in every case for which we may be called upon to prescribe, to endeavour to discover, as far as possible, the actual condition of the several tissues and organs of the body, and to base our curative measures solely upon the knowledge thus acquired, of the nature and extent and character of the ailment of our patient. In close connection with this was another rule laid down by him for our government, and that was, never to decide upon the administration of a particular remedy in any given case, merely from its reputed properties, or the place assigned it in the lists of the materia medica, but rather from the estimate, acquired empirically, of its adaptation to the control of the particular abnormal condition of our patient, in each separate case of disease; and then, when we do employ it, to watch carefully its action, that it may be promptly withdrawn should it prove inefficient or prejudicial.

Another important rule that was taught us, was that, in our curative ministrations, we are in all cases of disease to watch attentively the natural spontaneous movements of the system in its efforts to bring back the actions and condition of the affected organs and tissues to their normal rhythm and type —to support, guide, and manage these movements and tendencies; neither disturbing them, on the one hand, by too active an interference, nor on the other, allowing them to languish, or be impeded, or to deviate from the proper direction, while we stand by doing nothing, or if we do interfere at all, doing this in so timid, irregular, and ill advised a manner, as to render our exertions anything but satisfactory for the control of our patient's malady.

By these rules, the true spirit and meaning of which is here given, without reference to the precise language in which they issued from the lips of our preceptor, we have always been governed in our ministrations at the bedside of the sick. We feel persuaded that they have proved to us of infinite service; saving us from many of the errors into which the timid routinist, as well as the so-called "bold practitioner," are so constantly led. To the influence of the rules referred to, we may ascribe whatever of success it has been our good fortune to achieve in the practice of our profession. D. F. C.

ART. XX.—*The Cause of the Coagulation of the Blood; being the Astley Cooper Prize Essay for* 1856, *with additional Observations and Experiments, and with an Appendix, &c.* By BENJAMIN WARD RICHARDSON, M. D., London, 1858.

THIS treatise, to which the triennial Astley Cooper prize was awarded in 1856, is now published for the first time. The subject first attracted the author's attention in 1850, and, from that period until two years ago, received at various intervals all the attention which its intrinsic value would naturally excite, as well as that due to a paper intended for scientific competition. Since 1856, it has been still further elaborated by the author as opportunity offered for extending or corroborating his researches, and considerable additions have also been made to the original essay.

It is very evidently a work of importance, and one which demands, and will repay, a full and careful perusal. There is a solidity about its construction, and a directness of purpose in its mode of handling the subject, that claim for the whole treatise a complete and favourable consideration. There are some books written, from time to time, for the purpose of advocating new opinions, or bringing forward new discoveries, which it is not necessary even to read from beginning to end. The imperfect methods of investigation, and the fundamental misconceptions of the nature of the question at issue, are so apparent on a partial examination, that one is not disposed to spend his time in a more extended, but evidently profitless, perusal.

The case is very different with the present essay. There are detailed, within the proper limits of the essay itself, three hundred and ninety-nine experiments, evidently carefully performed, and every one having a definite bearing upon the subject in discussion. The reader feels, as he passes from one chapter to another, that he is making real progress towards a better understanding of the question, if not toward its complete solution; and each portion of the work has a positive and relative value which will not allow of the omission or careless perusal of any part.

The coagulation of the blood is a phenomenon so peculiar and striking in its character, that it is not surprising that it should have been the subject of repeated efforts at explanation. The regularity of its occurrence under ordinary conditions—its universality in all the higher animals, and in nearly all the lower classes as well—and, still more, the apparently spontaneous, and to a certain extent vital, nature of the phenomenon—have always invested it with a peculiar degree of interest. It has been found, however, at the same time, a very intractable subject for experimental investigation. It will bear, like many other obscure points in physiology, a great variety of purely hypothetical explanations; but when it comes to direct and serious experimental investigation, it has always eluded, in a singularly unsatisfactory manner, the solution which was expected and hoped by the investigator. His experiments remained, but seldom led to anything more than barren and negative results.

When it was supposed, for example, that the coagulation of the fibrinous portion of the blood might be due to a loss of warmth on being removed from the body, an explanation was offered which was at the same time perfectly simple and physical in its nature—one which called in the aid of no mysterious "vital principle," and which corresponded well with a number of known phenomena connected with the process. The cooling of the blood after its extraction, was ordinarily simultaneous with its coagulation. Coagulation was usually retarded in those inflammatory diseases in which the temperature of the body was raised above the natural standard; and finally, the blood, when allowed to remain in the deep vessels of the body after death, protected to a certain extent from the cooling influence of the external atmosphere, coagulated much more slowly than if it had been drawn from the veins, and directly exposed to the air.

Further experiment, however, only served to confuse and nullify the conclusions which had thus been partially established; for a moderate artificial elevation of temperature was found to hasten instead of retarding the coagulation of freshly drawn blood, while a reduction of temperature to 32° F. retarded instead of hastening it. The loss of temperature must accordingly be abandoned as a satisfactory explanation of coagulation.

Contact with the external atmosphere was another condition, which was considered at one time as essential to coagulation, and as representing its proximate cause. The slow coagulation of the blood under oil, and in closed vessels, favoured this mode of explanation; but its plausibility was again destroyed by the discovery that the process would take place as well when the blood was in contact with other gases than those of the atmosphere, and was even hastened when allowed to take place beneath an exhausted receiver.

The various chemical theories of the coagulability or the fluidity of fibrin, proved nearly all to be legally unsatisfactory. Most of them regarded the fibrin as naturally coagulable, but as retained in a fluid form, while in the circulatory system, by some chemical solvent. Some regarded it as naturally fluid, but as precipitated after removal from the veins, in consequence of a partial decomposition of the original substance. The latter supposition being entirely hypothetical, and quite insusceptible either of experimental confirmation or disproof, was very naturally almost entirely disregarded by investigators. The former held out some prospect of securing a definite result by an examination of the effects artificially produced by the addition of various chemical substances to uncoagulated blood, and their influence in either hastening or retarding the process. But although very many experiments of this kind were made, their results ended in little or no practical advantage, because, as the author justly remarks, either the substances themselves, found to act as solvents of the fibrin, were foreign to the blood, or the proportions in which they exerted a solvent action were not those in which they occurred in the living body. Beside, a double difficulty always presented itself in the way of any chemical explanation of the phenomenon.

In the first place, if the fibrin were naturally fluid, how should it coagulate after being withdrawn, without the addition of any known chemical agent? And secondly, if naturally coagulable, and only held in solution during life by some chemical ingredient of the blood, why should not the same substance continue to hold it in solution after its withdrawal from the veins? Nothing very definite, therefore, resulted from any of the inquiries made in this direction.

One of the most ingenious of all the theories offered in connection with this subject, was that which supposed the fibrin to maintain its fluid form in the circulation during life only on account of its rapid destruction by the normal processes of nutrition. As a coagulable substance, it was regarded as naturally disposed to solidify and be precipitated from the circulating fluid within a short period after its production; but being formed gradually during the nutritive changes taking place in the interior of the body, and thus entering the circulation molecule by molecule, and being afterward as rapidly taken up and assimilated by the tissues, no opportunity was afforded for its coagulation during the short interval between its production and its disappearance. Extracting the blood from the vessels, or retarding in any way the course of the circulation, would, under these circumstances, put a stop to the normal destruction and assimilation of the fibrin, and so give rise to the effect which actually does follow, viz: its coagulation.

This explanation, however, though on some accounts a plausible one, was open to the same objection with another already mentioned, viz: that it was purely hypothetical in its nature, and incapable of any positive demonstration, direct or otherwise. Though it might receive the support accordingly of those who were predisposed to adopt such a theory, it could never command the assent of the mass of the profession.

Another explanation, of a somewhat more physical character, referred the fluidity of the fibrin, while in the living body, to the influence of its *motion* in the interior of the vessels. It is true, that very few chemical analogies can be brought to the support of this opinion. The physical conditions of motion or rest do not, as a general thing, have much influence on chemical combinations and decompositions, solutions and precipitations. Still, instances are not altogether wanting where such an influence is really exerted; as, for example, when water may be cooled down below 32° F. without freezing, if kept perfectly at rest, and then be made to solidify into ice by a little agitation of its particles. Beside, all chemical actions are more or less under the control of various physical conditions. A high or a low temperature, the presence or absence of light, and the varying degrees of atmospheric pressure, are well known to have the power, in many instances, of determining or of preventing combinations, solutions, and precipitations. There is nothing, accordingly, absolutely improbable in the supposition that fibrin—a peculiar organic substance, and only found in the living body—should be so constituted as to be soluble in the serum of the blood while in motion, and insoluble when at rest. The motion of the blood, according to this view, would be the proximate and essential condition of its fluidity, and a cessation of this motion the determining cause of its coagulation.

It is very true that blood, once withdrawn from the veins, cannot be prevented from coagulating by being artificially kept in motion. Agitation in a closed vessel, or gentle stirring with a rod, may retard the process for a short time, but the fibrin always solidifies at last, and just as perfectly as if left at rest. It is plain, however, that no motion thus given to the blood can imitate, to any great extent, the natural continuous circulatory movement which it has while flowing through the vessels of the living body. The tubular arrangement of these vessels, their perfectly polished internal surfaces, and the physical relation between their lining membrane and the consistency of the blood-plasma, are conditions which cannot be supplied by shaking the blood in a bottle, or by stirring it with a stick. The occurrence of coagulation, therefore, when the blood is subjected to artificial agitation, does not neutralize the fact that it is prevented by the natural current of the circulation.

The hypothesis which we are now discussing, moreover, corresponds much better than any other with all the well known facts regarding coagulation. In the first place, it is certain that the healthy, normal blood always remains fluid so long as the natural current of the circulation is maintained. Secondly, if the circulation be arrested or in any way impeded, the blood inevitably coagulates, whether it be altogether withdrawn from the body or extravasated into closed cavities, the areolar tissue, or the parenchyma of organs, or retained in the interior of ligatured vessels. The stoppage of the circulation, partial or complete, seems to be the single condition, of all others, which is uniformly essential to coagulation, and which invariably produces it as a result. The blood coagulates, accordingly, in the living body, in the dilated portions of aneurismal sacs; in the tubules of the kidney, and in the pulmonary passages, when exuded into these organs in consequence of congestion and capillary hemorrhage; it is deposited upon the tendinous cords and the fleshy columns of the heart, when the circulation is becoming enfeebled, during the last hours of life; and it coagulates everywhere in the vessels, when the circulation finally ceases, at the time of death; in the perfectly healthy animal, a thread, passed through one of the veins from side to side, and suffered to disturb mechanically the passage of the blood at that spot, soon becomes covered with a coagulum, deposited from the circulating fluid.

So far as the matter has yet been studied, therefore, the most plausible opinion seems to be that which regards the fluidity of the blood as dependent upon the natural movement of the circulation in the vessels of the living body. This theory does not, perhaps, offer as definite and complete an explanation of the cause of coagulation as could be desired. It is rather a simple and accurate statement of the true conditions under which coagulation does and does not take place, and as such it has been of late years very generally received by physiologists, in preference to any of the other more pretentious, but less well founded hypotheses.

It is at this point that Dr. Richardson takes up his original investigations on the cause of coagulation. One entire chapter is devoted to the consideration of the various conditions under which the blood is found in the body after death. He finds that the blood may remain, in some cases, absolutely and entirely fluid, without any attempt at coagulation; or it may have united into a loose gelatinous clot, easily broken up by pressure or agitation; or it may be simply coagulated, without any separation between clot and serum; or again, the serum may have been exuded and absorbed by the neighbouring tissues, leaving the clot small, red, firm, and consistent. Besides these conditions, it is not unfrequently found that an actual separation of the fibrin takes place in some situations, producing colourless, white, or yellowish coagula, similar to those procured by stirring freshly drawn blood with a bundle of sticks, and afterwards washing the fibrin which is deposited upon them.

These separate and distinct fibrinous coagula occur, according to Dr. Richardson, as well as other observers, most frequently in the cavities of the heart, and in the large vessels in its immediate neighborhood. He finds them presenting the following different appearances:—

> The fibrin is deposited either "(*a*) in the form of a layer, or series of layers, upon a red clot; or (*b*) isolated, and itself filling a cavity, as the right auricle; or (*c*) modelled into a cylinder, and surrounded or grooved by a red clot; or (*d*) in the form of a hollow cylinder, more or less perfect, adapted to the vein or artery in which it is situated, and having a cord or column of coagulated red blood running through it; or (*e*) merely fringing a valve; or (*f*) laid down on the endocardial surface in the form of a membrane; or (*g*) lying loose as a cord in one of the large vessels, the remaining blood being either coagulated or fluid."

In most of these cases, the separation of a colourless coagulum is thought to depend upon a relative or absolute increase in the quantity of fibrin in the blood. It is well known, indeed, that such fibrinous concretions are most frequently met with in cases of death from those diseases which are characterized by an unusual abundance of fibrin (hyperinosis): such as pneumonia, pericarditis, &c. In such cases, the coagulation of the blood in the heart and large vessels is accompanied by the same phenomenon as if it took place outside the body, viz: the formation of a buffy coat. The fibrin separates from the red blood, and remains upon its surface as a colourless coagulum, often extending a considerable distance from the right ventricle into the upper part of the pulmonary artery.

There is no doubt that these fibrinous concretions are formed in many, perhaps in most instances, after death, following, of course, the general laws which regulate the production of the buffy coat in blood drawn from the veins. It is believed, however, by very many, that they are also liable to be formed during the last hours of life, when the failing action of the heart, and the impeded flow of blood through its cavities, combine with the superabundant proportion of fibrin in the circulating fluid to cause its separation and deposit before its movements have altogether ceased. Under these conditions, the tendinous cords and valves of the heart whip out the fibrin from the blood in greater or less abundance, as would be done by a bundle of rods in a glass vessel.

Dr. Richardson entertains no doubt that such concretions are frequently formed in this manner during life. He finds them oftenest taking their origin in the appendix auricularis of the right auricle: a situation where the saccular form of the cavity, the comparatively feeble power of contraction, and the presence of projecting and interlacing muscular bands, would naturally combine to offer a favourable point of deposit. According to Dr. R., more than half the concretions found on the right side of the heart have their attachment upon the inner surface of the appendix auricularis. The funnel-shaped portion of the right ventricle, leading into the pulmonary artery, is another favourable situation, and also the edges of the valves, and the tendinous cords and fleshy columns, round which the filamentary clots are sometimes wrapped in an exceedingly intricate manner.

The marks upon which the author relies for distinguishing fibrinous concretions of *ante* and *post-mortem* origins, are derived from the different mode of their formation in the two cases. Post-mortem concretions separate from the rest of the bloody coagulum precisely as does the buffy coat of blood drawn during life; while those formed during life have an independent attachment, and often show very distinctly their mode of origin by their relations to the neighbouring parts. In one case, the clot is formed while the mass of the blood is still fluid and in motion; in the other, when it is at rest, and is in process of coagulation throughout.

> "The differences thus produced," says the author, "are, in truth, so marked that, from the appearance of a fibrinous concretion alone, one may easily tell whether or not it preceded death. If it have been formed from blood at rest, that is, after death, it will be a simple coating on and above a red coagulum; if it have been formed from blood in motion, that is, before death, it will be modelled to the containing vessel or cavity, or will be grooved by the blood currents that have passed along it, while, in some examples, where it has been laid down in a vessel, it may be found as a perfect tube, inclosing a column of blood, and resembling, in fact, an inner and additional coat of the vessel in which it is deposited."

The author gives a number of instances, from his own observation, of fibrinous concretions discovered after death, but which, judging from their configuration and laminated structure, must have been deposited during life. Some of them filled more or less the cavities of the heart, extending downward into the vena cava, or upward into the aorta or pulmonary artery.

One of them sent a prolongation into the aorta no less than eleven inches in length, presenting a tubular shape, its central portion being occupied by a fresh red clot, formed subsequently to death. Dr. R. is even of the opinion that such tubular concretions, by being displaced from their attachments, and carried onward to a narrower part of the vessel, may there give rise to alarming symptoms, and occasionally produce a fatal result.

The most original part, however, of this chapter, is that in which the author demonstrates, by direct experiment, the possibility of fibrinous concretions being formed while the circulation is still going on. He was led to make use, for this purpose, of the fact previously ascertained by Dr. Gairdner, that continued respiration of pure oxygen, in the lower animals, produces, after a time, an increased quantity of fibrin in the blood. Dr. R. accordingly inclosed his animals (a pigeon and a Guinea pig) in glass chambers, through which a continuous current of oxygen was passed, until the muscular and nervous exhaustion produced by the unnatural mode of respiration threatened soon to terminate in death. The animal was then narcotized with ether or chloroform, the chest opened, and the heart shown to contain either red or fibrinous coagula, or both. Dr. Richardson's account of the result of one of these experiments will show how conclusive they were upon this point.

> "As soon as insensibility was complete," he says, p. 76, "I removed it (the Guinea pig) from the chamber. It was making eight respirations per minute; the heart-beats being irregular, quick, and feeble. I now, with one or two sweeps of the knife, removed the ribs anteriorly, and laid the heart bare; it was seen pulsating quickly. The right auricle was much distended. The cavities were immediately laid open. A watchglassful of blood, caught from the superior vena cava, coagulated firmly in two minutes, the clot being intensely red. In the right auricle, there was a little fluid blood. In the auricula, there was a clot of fibrin, distinctly separated, modelled to the part where it was found, and about the size of a large hemp seed. The inner surface of the auricle was coated with a fine layer of fibrin, which was easily removable with the point of the scalpel. In the left cavities, fine, web-like cords of fibrin were interlaced with the chordæ tendineæ. To the free margins of the aortic valves, there were firmly attached three semi-transparent beads of fibrin, each of the size of a small pin's head. The aortic valves were fringed, on their free margins, with fibrinous beads, one valve having also a swollen and reddened appearance. In the aorta, there lay a thin but long thread of fibrin."

The condition of the blood after death is also described as modified by the influence of poisonous substances, and of various unnatural conditions; as, for example, after death from chloroform, tobacco, hydrocyanic acid, ammonia, a continued high or low temperature, the injection of an excess of watery fluid, &c. In most of these instances the coagulability of the blood was either diminished, or altogether destroyed.

The next chapter (Chapter IV.) is a very important one, treating in an extended manner of the direct influence exerted by various physical conditions on the coagulation of the blood. All the experiments here detailed are of great interest, from the careful and judicious manner in which they have apparently been performed; the discrepancies often seen in the results of previous observations on this subject being avoided by constant attention to the secondary conditions of the experiment.

The influence of *temperature* upon freshly drawn blood was studied in various ways; by receiving the blood in cups placed in hot and cold water; by mixing with the blood water at a high or low temperature; and by receiving it in ice-cups, or subjecting to the freezing process. All these experiments led to the very uniform conclusion, that an elevation of temperature hastens, and its reduction sensibly retards the process of coagulation.

Simple *dilution* of the blood with water was found to have little or no influence on the rate of coagulation when the volume of water was not larger than that of the blood; but when added in excess its effect was to retard the process and interfere with its perfect accomplishment.

The effects of *exposure to or exclusion from the air* on freshly drawn blood, were strongly marked, and very decisive. Different portions of blood, for example, taken at the same time from the same animal, and in the same quantity, were placed in vessels measuring three and half inches, one inch, half an inch, and an eighth of an inch in diameter; so that similar volumes of the same blood should be allowed to coagulate under different degrees of exposure to the atmosphere. It was found that coagulation took place in the different vessels with a rapidity corresponding to the degree of exposure, viz., in three minutes and a half, four minutes and a half, six and eight minutes respectively. Exposure to the air at ordinary pressures accordingly hastens coagulation.

Diminished atmospheric pressure, again, produced by partial exhaustion under a receiver, *always* hastened coagulation, while increase of pressure under mercury retarded it. Blood allowed to flow through glass tubes of different diameters coagulated first in those of smallest calibre, and last in those of the greatest width. Blowing air forcibly through fresh blood from below hastened coagulation; retaining it in a closed tube, or in a vein between two ligatures, retarded the process in a very marked degree. The latter result, indeed, corresponds with what every one must have observed with regard to ordinary coagulation in the vessels of the body after death, viz: that it takes place much later than it would in the same blood exposed to the air. Dr. R., for example, found that in the dog, blood inclosed between ligatures in the jugular vein, remained fluid for fifteen minutes and half an hour, coagulating in each instance in one minute after being withdrawn from the vein; while coagulation took place within the vein itself only at the end of three-quarters of an hour (p. 194). In other instances the blood in the ligatured vessel remained fluid for an hour to two hours and a quarter. Blood effused into the cellular tissue even remained fluid for three hours, but was found to be coagulated at the end of six hours.

The influence of *motion* on freshly drawn blood is also investigated. Agitating the blood freely in the open air, as by stirring it rudely with a bundle of sticks, hastens coagulation; but shaking it in a closed bottle as certainly retards it. Thus, blood which coagulated when at rest in three minutes and three-quarters, when shaken in a stoppered bottle coagulated only at the end of seven minutes and a half. Blood which coagulated at rest in two minutes, shaken in a closed vessel, coagulated in seven minutes. These results were so uniform as to leave no doubt of the fact that agitation of the blood in closed vessels retarded, though it could not absolutely prevent coagulation. It is also ascertained that the exclusion from the air is not the only active agency in this experiment, but that motion also has something to do with producing the effect. For blood agitated in a closely stopped bottle, coagulates more slowly than if inclosed in a similar vessel, but allowed to remain at rest.

Dr. R., however, is well aware of the fact that such motion as may be communicated to the blood by the above contrivances, cannot be regarded as at all similar to the natural movement of the circulating fluid in the vessels of the body. He has therefore contrived a very ingenious apparatus for imitating this circular motion of the blood, and has succeeded in his attempt, we should judge, as well as it is possible to do in such a case. The apparatus consisted of two semi-circular glass tubes connected at their opposite extremities, which are directed towards each other, with a couple of India-rubber bags, larger in diameter than the tubes themselves, so that the whole formed a closed circuit of tubes and reservoirs. The circuit was filled with fresh blood through a funnel leading into one of the glass tubes, and guarded by a stopcock; after which, by alternately compressing first one and then the other of the India-rubber bags, with the assistance of simple spring valves properly adjusted, the blood was forced outward in a continuous circular current, constantly returning upon itself so long as the alternate motion of the bags was kept up.

The effect of this contrivance was to retard more decidedly than in any of the other instances the rate of coagulation, the blood being found to be still fluid and coagulable after circulating in the above manner for ten minutes and a quarter of an hour. Later than that a separation of the fibrin took place in the circuit, portions of blood subsequently withdrawn being found to be completely defibrinated and uncoagulable. It is very curious, however, to remark that in all these instances coagulation took place only in the form of fibrinous layers deposited on the internal surface of the India-rubber bags; that is, in the dilated portions of the circuit, just where the velocity and continuous character of the current were disturbed, and precisely as happens in an aneurismal sac within the body. These experiments many times repeated, also gave a uniform result.

Chapter V. contains a detailed and elaborate inquiry into the influence exerted by purely *chemical agencies* on the coagulation of the blood. The author exposes the true reasons why investigations into this part of the subject have heretofore been so barren and unsatisfactory; observers having experimented, as it were, at random, and not confining their investigations as they should have done, to substances actually existing in the normal blood, and therefore, perhaps, capable of actually exerting an influence on coagulation.

> "Two classes of inquiries," he says, "have thus been instituted: one whether drawn blood can be retained in a fluid state by chemical agents; the other whether coagulation can be expedited by chemical agents. In this way blood has been subjected to the action of the mineral acids, of nitrate of potass, nitrate of soda, nitrate of ammonia, nitrate of lime, nitrate of baryta, bichloride of mercury, chloride of strontium, and a host of other substances which it is not necessary to repeat. In the application of these chemicals they have sometimes been injected into the circulatory system by the veins, and at other times added to drawn blood. But the results obtained have necessarily been unsatisfactory, and have failed to solve the question of coagulation. It may be true that a strong solution of nitrate of soda prevents coagulation. But to what does this lead? Nitrate of soda should first be proved to exist in the living blood. If it does not exist there, how can it keep the blood in a fluid state? conversely, does the fact that coagulation follows the injection of bichloride of mercury into the veins aid us in determining the cause of this phenomenon as it occurs spontaneously? The question requires no answer."

The author's own plan of investigation is a more judicious one. He divides the inquiry to be pursued into two principal questions as follows:—

> "1. Does the blood naturally contain any agents which have the power of holding the fibrin in a state of solution?
>
> "2. If there is an agent in the blood possessing this power, why does it lose its influence when blood is drawn and subjected to those physical influences which we have already proved from experiment to promote coagulation."

In pursuance of this plan, he investigates the action exerted on fibrin by the fixed alkalies, soda and potass, their salts, chloride of ammonium, lactate of ammonia, and various organic acid, saline, and alkaloid substances, more or less certainly known to exist in the blood. Of all these substances the fixed alkalies alone, with butyric acid, were found to exert a slow but distinctly marked solvent action on coagulated fibrin.

A similar series of experiments then follow, in which the action of the same substances on freshly drawn blood is examined; the exact quantities of blood and of the chemical agent employed being noted in every instance, and, as a general rule, varied in different experiments. The results obtained in this way show in a few words that the fixed alkalies, soda and potass, when added to fresh blood in the proportion of about two parts per thousand, have the property of holding the blood permanently fluid, though in smaller quantities they fail to produce this effect; and that there is no saline substance naturally present in the blood, which has the power of preventing coagulation, unless added in very much larger quantity than that in which it normally occurs in the circulating fluid.

No direct progress, therefore, is made, so far, toward discovering, among chemical agencies, the immediate cause of coagulation. It cannot be the fixed alkalies which act as natural solvents for the fibrin; because, in the first place, their quantity is not sufficient for this purpose, since it must be largely increased, by addition to the freshly drawn blood, in order to retain the fibrin in a fluid form; and secondly, if they really do act as solvents for the fibrin before the blood is drawn, why do they not do so afterward, as well? An equally decided objection exists against attributing a solvent action to chloride of sodium. For though this salt does exist in the blood, it is present there only in the proportion of six parts per thousand; while to retain the fibrin in solution, in must be added in much larger quantity.

> "A good deal," the author remarks in reference to this subject, "has been said about the effects of chloride of sodium on blood; and experiments have been over and over again made, to prove that this salt possesses the property of keeping blood in a state of fluidity. This fact is undeniable; but inasmuch as twenty grains of the salt are required to keep an ounce of blood fluid, it is impossible to presume for an instant that chloride of sodium is the natural blood solvent. To produce any solvent effect on fibrin itself, a saturated solution of the salt is required; and even then the result is imperfect."

The same difficulty, also, which we have already found to exist in the case of the fixed alkalies, presents itself in regard to chloride of sodium, as well as all other chemical substances yet found to be capable of dissolving fibrin, and at the same time constituting a part of the natural ingredients of the blood. The blood, which is fluid while in the circulation, solidifies almost immediately, after being withdrawn from the veins. This is the simple and invariable fact, the primitive and essential phenomenon of coagulation. None of the above substances, therefore, can act as natural solvents of the fibrin, because they actually do not hold it in solution after it has been withdrawn from the veins. And yet, if they exist in the blood before its withdrawal, they must exist in it equally afterward.

If the fluidity of the fibrin, accordingly, in the living blood, be due to solvent power of a chemical agent, it must be some substance which is either decomposed or lost in some way, on the withdrawal of the blood from the veins. Judging from the known facts of the case, it should be most probably a volatile substance, capable of escaping from the blood on its extraction and exposure to the air, and of thus leaving the fibrin, which was before in solution, to be precipitated as an insoluble body.

Nearly all the ascertained facts regarding the influence of physical agencies on coagulation favour the above supposition. All those conditions which would hasten the escape of a volatile substance, as a high temperature, diminished pressure, free exposure to the air, &c., accelerate the process of coagulation; while all those which would have a tendency to retain a volatile substance in solution, as excessive cold, increased pressure, seclusion from the air, retard coagulation to a similar extent.

The author next proceeds to ascertain whether any substance be really given off in the form of vapour from fresh blood, which has the power of retarding or preventing coagulation. This he does by passing the vapour of freshly drawn blood, during its coagulation, through other portions of the blood of the same animal; arriving by this means at the result, that blood vapour does exert, in this way, a very definite action in retarding coagulation. It does not, of course, prevent coagulation altogether; since, from the necessary conditions of the experiment, the blood vapour can only be carried over in a very dilute form, and its supply, moreover, is very limited. But the results of the experiment appear to be quite satisfactory, so far as they go.

It next becomes necessary to determine what particular substance it is, among the gaseous products known to be evolved from fresh blood, that exerts this effect. Carbonic acid, oxygen, and nitrogen, are all given off in larger or smaller quantity, but the author's experiments on these substances lead him to the conclusion that none of them, when added to fresh blood, exert sufficient effect in retarding or hastening coagulation, to explain by their influence the phenomena which belong to it.

Having exhausted the examination of all the known gaseous constituents of blood, the author then proceeds to search for others, not already discovered; and is led in this way to establish the existence of *ammonia*, as one of the substances exhaled from freshly drawn healthy blood. This is, in fact, the most original and important point in the entire treatise. It is upon this proposition that the whole structure, so far as it is to be considered as a discovery, or as a well founded explanation of the coagulation of the blood, is based. It accordingly receives from the author a full and thorough investigation; occupying, with its corollaries, a large part of the present chapter.

The ammoniacal vapour given off from fresh blood is not to be detected, according to Dr. R., by either reddened litmus, or a glass rod moistened with hydrochloric acid. These tests, however, he finds are not sufficiently delicate for the purpose; since ammonia, artificially added to fresh blood, in the proportion of two parts per thousand, cannot be detected in its vapour by the above means.

The test, however, which the author finds more successful, and upon which he depends altogether for the proof of the fact, is the formation of ammonio-chloride of platinum and chloride of ammonium, deposited from the vapour of fresh blood, in the form of microscopic crystals, upon glass surfaces moistened with hydrochloric acid, and afterwards treated, in the necessary instances, with a solution of perchloride of platinum. There are detailed, in this chapter, twenty-one experiments leading to the above result; performed evidently with all the precaution necessary to make them reliable and conclusive. We cannot doubt that this fact, of the evolution of ammonia from freshly drawn blood, has been fairly established, and may therefore be regarded as a positive acquisition to science. The precise quantity of ammonia given off in this way could not be ascertained, owing to the necessary loss of a portion of it in transferring the blood to the receiver of the apparatus, the varying rapidity of its evolution from the blood of different animals, and under varying degrees of pressure, &c. &c. Its quantity, however, is exceedingly minute, as shown by its inability to restore the colour of reddened litmus, or to produce white fumes with hydrochloric acid.

The next step in the plan of investigation adopted by the author, is to examine directly the effect of ammonia upon fibrin and upon freshly drawn blood. It appears, from the experiments performed with this object, that ammonia acts, like soda and potass, as a solvent upon pure coagulated fibrin; and that it has also a similar effect in retarding or preventing coagulation, when added to fresh blood. One part per thousand of ammonia, added to ox's blood, retains it in a state of permanent fluidity, if kept in a stoppered bottle. If added in smaller quantity, and exposed to the air, it retards coagulation to a corresponding degree, and renders it imperfect in character. (Exps. 326—339.) Blood to which ammonia has been added, after remaining fluid in a stoppered bottle for several hours, coagulates more or less rapidly on being exposed, in a wineglass, to exhalation in the atmosphere (Exp. 323); and the evolution of ammonia, which must necessarily take place during this time, is found insufficient to produce white fumes with hydrochloric acid.

Moreover, the influence of various physical agencies on blood treated with ammonia are what would naturally be anticipated from the volatile properties of the alkali. Ammoniated blood, which remained fluid so long as it was confined in a stoppered bottle, coagulated in eight hours if exposed to the air, and in four hours if subjected to exhaustion under the receiver of an air-pump. (Exp. 369.) Ammoniated blood, which, exposed to the atmosphere at 94° F., coagulated in five minutes, remained fluid for six minutes at 60° F., and for fifteen minutes at 35° F. (Exps. 352–3–4.) Blood mixed with a small quantity of ammonia, which, allowed to remain at rest, coagulated in nine minutes, when stirred briskly in the air, coagulated in three minutes. (Exps. 384–5.) In all these instances the blood of the same animal, without any addition of ammonia, coagulated in a much shorter time.

The coagulation of ammoniated blood may also be hastened by the cautious addition of the fixed alkalies, potass or lime, in sufficient quantity to disengage the ammonia, but yet not in such abundance as to act, themselves, the part of solvents for the fibrin. (Exps. 391–2–3.) This would make it appear that the ammonia which retains the fibrin in solution is in the form of a carbonate, from which combination it is expelled on the addition of free potass or lime. For while carbonate of ammonia is capable of preventing coagulation when added to fresh blood, the carbonates of the fixed alkalies have no such power.

So far, the chain of evidence adduced by the author is very complete and well connected. He goes further, however, and shows by subsequent experiments the extremely curious and important fact, that freshly coagulated blood, redissolved by the action of ammonia, added in small quantity, will again coagulate on the displacement of this ammonia by fixed alkalies and a high temperature. This result we regard as one of the most remarkable and important of those given in the whole treatise; and in order to show the reader precisely how the experiments were conducted, we extract the account of one of them in the words of the author.

"EXPERIMENT CCCXCV. *Re-solution and Re-coagulation of Blood Clot* (p. 319).—I had a few pounds of blood caught from the neck of an ox, and set it aside for twenty-four hours, that the serum might separate completely. When this had occurred, I removed from the clot two hundred and fifty grains, and placed this portion of clot in a mortar. I next drew off two hundred and fifty grains of the serum in which the clot had floated. I then added a minim and a half of liquor ammoniæ (specific gravity .882) to the serum: and, breaking up the clot in the mortar gently with my fingers, I gradually added to it the ammoniated serum, and gently triturated with the pestle, continuing this process until the whole of the clot had entered into solution. The process is very tedious, for small portions of the clot slip from the pressure of the pestle: but, with care and time, the re-solution may be made perfect. When the clot was entirely dissolved, the solution formed had a slimy feel, like newly drawn blood; and a drop of it, remaining on the warm hand, formed also a thin glutinous layer like fresh blood. I poured the solution thus made into an evaporating dish, and, adding to it a little milk of lime (made by slaking four grains of lime and adding water), placed the dish on a water bath at 100° Fahr. Ammonia was freely evolved, and in fifteen minutes the blood had reset into a dark clot, a little more treacly in character than the previous blood clot, but firm and uniform. A little serum exuded from this clot."

A similar result is given in five different instances, the second coagulation varying somewhat in firmness, but always being perfectly distinct, and producing a clot modelled to the form of the containing vessel.

The summary of the foregoing experiments and of the conclusions to be derived from them, is given by the author under the form of two *Major Propositions*, as follows (p. 338):—

"I. *First Major Proposition.*—The primary and essential part of the process of coagulation consists in the evolution of a volatile principle from the blood.

[This is proved by the experiments which have gone before. These experiments have shown that coagulation is *prevented* by exclusion from air or other gas, by cold, and by cold and pressure; and that it is retarded by motion in a closed circuit, and by addition of dense fluids. Conversely, other experiments have indicated that exposure to the vacuum, to air, or other gases, motion during such exposure and increase of temperature during such exposure, are each and all physical conditions which *quicken* coagulation.

With the escape of a volatile agent, these conditions are all in perfect accord and harmony; in the presence of any other view, they become mere disjointed and even contradictory phenomena.

The proof is carried further still in the experiment of passing the vapour of blood through blood, and in the suspension of coagulation which succeeds.]

II. *Second Major Proposition.*—The volatile principle thus eliminated from blood is *ammonia*, differing, perhaps, in formula in different classes of animals, but serving essentially the same purpose in all.

[This proposition is proved by two series of experiments; first, by those which have shown that ammonia may be obtained from blood vapour; and, secondly, by the results which follow the addition of ammonia to newly drawn blood. Still further, but in the same direction, it is proved in the experiments of redissolving the blood-clot, or the fibrin-clot in ammonia solutions, and reproducing coagulation by eliminating the ammonia.

Lastly, the proposition is exemplified by the experiments which show that, in blood held temporarily fluid by excess of ammonia, coagulation is favoured or retarded by the same physical agents as those which favour the normal coagulation of blood."]

We have thus given a somewhat detailed review of the author's experiments, and of the successive steps by which his progress is made toward a new solution of the phenomenon of coagulation. In no other way could we do justice to the connected plan of the work, and to the original statements and investigations contained in it. These investigations are unquestionably of great value. The author has established beyond a doubt the fact that ammonia exists in freshly drawn blood, and is exhaled from it, immediately after its withdrawal from the veins. He has shown that ammonia, artifically mixed with fresh blood, interferes with coagulation in the same manner with the fixed alkalies, and even with greater energy than they, when used in the same proportion; but that, owing to its volatility, it may afterwards disappear by exhalation, and thus allow coagulation to take place.

The insurmountable difficulty, therefore, which is presented against considering potass or soda as the natural solvents of the blood-fibrin, does not exist in regard to ammonia. The volatile alkali may easily hold the blood fluid while in the vessels, and yet allow it to coagulate after being withdrawn. The effect of nearly all modifying agencies on the rate and mode of coagulation, are also shown to harmonize very closely with their influence on the discharge of a volatile substance. When the author, accordingly, unites these different propositions into one, and claims that the ammonia of the blood *is* actually the natural solvent of the fibrin, and that its escape after withdrawal of the blood is the sole and simple reason why the fibrin, thus left to itself, precipitates as an insoluble substance, he is supported by many very significant and well ascertained facts; and he has certainly suggested a more definite, and therefore acceptable explanation of the coagulation of the blood, than any of those previously advanced, which had an equal basis of support in experimental phenomena.

If we are to accept this explanation, however, as a full and accurate account of the true nature of coagulation, we must first see whether it harmonizes completely with *all* the known facts relating to this process. There are many theories in physiology, which correspond sufficiently well with a certain portion of the actual phenomena presented by nature, but which turn out to be imperfect when compared with other facts, equally important in this respect, because equally absolute in their existence. If the theory truly represent what actually takes place in nature, there can be no discrepancy possible. It must necessarily embrace all the phenomena relating to it in an equally complete and legitimate manner.

We must acknowledge that there are some points regarding the coagulation of the blood which do not harmonize altogether with the explanation offered in our author's treatise. If a glass-stoppered bottle be filled with freshly drawn blood, by immersing it and inserting the stopper beneath the surface of the fluid, so as to prevent entirely the introduction of air, the blood will be found coagulated at the end of ten or fifteen minutes. In this case, the blood is fluid when inclosed in the bottle; therefore the natural solvent of the fibrin, if such there be, must still be present. If this be ammonia, as believed by Dr. R., how can it escape under the circumstances, and allow the fibrin to coagulate? Mr. Gulliver (Works of Wm. Hewson, Sydenham ed., p. 20), in repeating the experiments of Sir Astley Cooper and Mr. Thackrah on this subject, found that in blood, drawn from the living animal in such a manner as to cut off all communication with the atmosphere, coagulation was "generally, but not invariably, slower than in blood received through the air into a tube." It certainly was not permanently interfered with under these conditions.

The author himself met with a similar result in the experiments, which have been already alluded to, of keeping freshly drawn blood in circular motion in an apparatus composed of glass and India rubber tubing. He found coagulation had taken place in this apparatus in from twenty minutes to half an hour. If it were ammonia which originally held the blood fluid, how could it have escaped from such an apparatus?

This result becomes still more striking in comparison with another experiment, detailed at page 331, in which slightly ammoniated blood introduced into the same apparatus, did not coagulate. In this experiment, ammonia was added to fresh blood, in the proportion of one-eighth part per thousand, and the whole immediately transferred to the closed circuit. It was then kept in steady circular motion for an hour, at the end of which time the blood was turned out perfectly fluid, but on exposure to the air rapidly underwent coagulation. If the ammonia could not escape from the blood in this experiment, while inclosed in the circuit, why should it have done so in the first?

The blood, again, undergoes coagulation in the interior of the body whenever the course of the circulation is arrested, either by death of the whole body, or from local causes. It is true, coagulation is slower here than if the blood were drawn into a cup and exposed to the atmosphere, but still it takes place. According to Mr. Gulliver's experiments, blood included between two ligatures in the jugular vein of a living dog, begins to coagulate generally in three hours, and is completely coagulated in from nine to twenty-four hours. Every surgeon knows that a coagulum forms behind the ligature which he places upon an artery, and in a vascular tumour which he ties at its base. Is the ammonia, in these cases, allowed to pass by transudation through the tissues, and gradually exhaled in this way from the exterior? It is not very difficult, perhaps, to suppose this, where the ligatured vessel is superficial, or largely exposed in the wound. But how, when it is deep in the substance of a limb, or in the closed cavities? Or how, when hemorrhage takes place in the interior of the cranium, does coagulation take place so readily?

But the greatest difficulty lies in the well-known fact that any obstruction to the free course of the circulation, however slight, affords occasion during life for coagulation to take place. The fibrin solidifies not only in ligatured vessels and in superficial or deep-seated extravasations, but in aneurismal dilatations, the internal surface of which becomes covered with layers of coagula. How does it happen that the ammonia of the blood just at this spot can no longer hold the fibrin in solution? Dr. Richardson, in his Appendix (p. 421), speaks of this incidentally while upon the subject of aneurisms and their clots, but his explanation does not appear to us a very clear one.

> "Stasis," he says, "is, after all, the primary element (of coagulation). But stasis, in itself, would never lead to deposition if the fluid were permanent; nay, it does not even lead to the final deposition of blood-corpuscles, for these are washed away with the stream; but it is sufficient to lead to the deposition of the plastic fibrin, held as it is but temporarily fluid by a solvent which, under favouring physical conditions, is diffused and borne away."

It is not easy to understand here why, if the ammonia of the blood is "diffused and borne away," the fibrin which it holds in solution should not be diffused and borne away at the same time. The well-known experiment of passing a thread transversely through the vein of a living animal, presents a similar difficulty of explanation. Such a thread, after a short time, becomes loaded with coagula. In this case, what becomes of the ammonia which should hold the blood fluid? It is not exhaled directly, for it is inclosed in the cavity of the vessel. It is not absorbed and transmitted by the walls of the vein, for it is not in contact with them. It cannot be taken up by the current of the passing blood, for that is already charged with the same substance in the same quantity. There is no ready and easy mode of accounting for the phenomenon of coagulation, under these conditions, by the escape of an ammoniacal solvent.

We do not say that the difficulties which we have thus alluded to are such as to invalidate altogether the hypothesis which Dr. Richardson has supported by so much careful observation, and so many well arranged and important experiments. They may be explained hereafter in some way not known to us at present, and brought into harmony with the other facts bearing upon the question of coagulation. Still, they are thus far real difficulties, and should not be lost sight of in the discussion of so important a physiological problem.

In the Appendix, the author treats at some length of various pathological conditions connected with the subject of the treatise—such as the super-alkalinity of the blood, and consequent want of coagulability; of the deposition of fibrin in the form of concretions in the vascular system during life, and of the symptoms and accidents to which it may give rise; of the acids and alkalies as remedial agents in such conditions; of the normal exhalation of ammonia from the body, particularly as an ingredient of the breath; and of some conditions of the blood after death in relation to medico-legal inquiries.

In the chapter on the *Phenomenon of the Buffy Coat*, there occurs the following singular specimen of scientific kite-flying—the more remarkable for its contrast with the generally solid and substantial character of the contents of the treatise.

> "If I venture, in fine," says the author, "to speak of inflammatory blood as blood in which the oxidation process is abnormally active, or let fall the suggestion that in this state the iron inclosed in the blood-cells may possibly have become the magnetic oxide, and that the rapid aggregation of these cells in inflammatory blood has thus some relation to the magnetic force, I do so open to the correction of more extended observation."

We do not know how far the pathological and therapeutical portions of Dr. Richardson's essay will be regarded as advancing the condition of practical medicine; but as a contribution to physiological science, it is certainly a work of no ordinary value. J. C. D.

ART. XXI.—*On Malformations, &c., of the Human Heart. With original cases.* By THOMAS B. PEACOCK, M. D., Fellow of the Royal College of Physicians, Assistant Physician to St. Thomas's Hospital, and Physician to the Hospital for Diseases of the Chest, Victoria Park. London: John Churchill, New Burlington Street, 1858, 8vo., pp. 143.

THE various malformations to which the heart is subject, constitute a study interesting in itself, and important, as well as interesting, in its relations to the physiology of the circulation, and to embryology. Nor is this study devoid of direct practical bearings. It is desirable for the practitioner to recognize the existence of these malformations by means of signs and symptoms during life, and, so far as diagnostic criteria are available, discriminate between them. Moreover, the histories of cases, taken in connection with the appearances after death, furnish information respecting the effects of derangements of the circulation incident to the various malformations, which may be usefully applied to elucidate the phenomena of disease.

This small volume contains the substance of a series of lectures delivered by Dr. Peacock, at St. Thomas's Hospital, in 1854, and subsequently published in the *Medical Times and Gazette.* In the present publication the form of lectures is dropped, and the whole has been carefully revised and considerably extended. The author gives cases illustrative of the different forms of malformation, many being selected from the instances which have come under his own observation. Reference is made to analogous cases reported by different observers in different countries. Some of the most interesting forms of malformations are represented by well executed lithographic plates.

The author's classification is based on distinctions which, in themselves, involve a philosophical view of the subject. He arranges the different malformations into four classes, as follows: 1. Congenital misplacements of the heart. 2. Deficiency of the pericardium. 3. Malformations of the heart, including—1st, malformations dependent on arrest of development at an early period of fœtal life; 2d, malformations preventing the changes which should come after birth; and, 3d, malformations which do not interfere with the functions of the heart, but may lay the foundation of disease in after life. 4. Malformations consisting in the irregular development of the primary vessels. So little attention is bestowed on this field of study by medical practitioners in general, and it occupies so little space in medical literature, that we trust our readers will not find fault with us for noticing briefly some of the points of interest relating respectively to these divisions.

The misplacements of the heart are either of *transposition* or *exposition.* Instances in which the organ is situated in the right side of the chest are not so unfrequent but that numerous examples have been observed. In some of these instances other viscera are likewise transposed, but in other cases the latter occupy their natural positions. This abnormal situation of the heart is by no means incompatible with health and long life. It is desirable to distinguish between cases of this description and those in which the heart has been displaced by pleuritic effusion, and retained its malposition after the effusion has been absorbed. This discrimination is not always easy. We have met with a patient affected with tuberculosis in whom the heart was found to be situated on the right side of the sternum. The patient presented the signs of an ancient pleurisy on the left side, but the pleura, at the time of our examination, contained no liquid. It was a matter of doubt in this case, whether congenital malposition existed, or whether the heart had been dislocated by the accumulation in the pleura, which had existed at some former period, and, forming attachments, was prevented by these from resuming its normal position after the pleuritic accumulation had disappeared. We have been informed that a highly distinguished American medical writer presented the anomaly of the heart being contained in the right side of the chest.[1] In cases of *exposition,* the heart may be situated exterior to the chest (*ectopia pectoralis cordis*). Such instances are exceedingly rare, unless, at the same time, the viscera of the abdomen are protruded. In none of the cases cited by the author, in which the heart alone was exterior to the chest, did life continue over forty hours after birth. These cases offer valuable opportunities for studying the movements of the heart by means of the sight and touch. In other cases the heart is situated below the diaphragm, and in these cases there may, or may not, be an external tumour. This form of malposition (*ectopia cordis ventralis*), is not incompatible with vigorous health. A case is cited of a soldier in whom the heart occupied the place of the right kidney; the patient died of disease of the kidney, and intra-pelvic tumour. A very curious abnormal situation of the heart included under this head, is in the front of the neck (*ectopia cordis cephalica*). Several cases of this malposition have been reported, in all of which the infants scarcely survived birth.

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[1] The late Dr. Elisha Bartlett.

Deficiency of the pericardium was described as an occasional abnormity by the older anatomists. It is highly probable that in some of the instances thus regarded, the pericardium was not really wanting, but was only apparently so, owing to unusual adhesion having taken place as a result of pericarditis. The pericardium, however, may undoubtedly be absent. Dr. Baillie described an instance in 1788, which came under his observation incidentally, the chest having been opened to explain to his class the situation of the thoracic viscera. The heart was bare and distinct, lying loose in the left cavity of the pleura. In this instance there had been no morbid symptoms referable to the heart during life. In several other examples given by the author, no troubles pertaining to the heart or circulation had existed. In one the patient died of the age of 75 years, with aortic valvular disease.

Malformations of the heart dependent on arrest of development at an early period of fœtal life, are the most numerous, and, in a scientific point of view, the most interesting. As many as ten authentic examples of biloculate heart, *i. e.* the heart consisting of an auricle and ventricle, have been reported by different observers. A few days constitute the duration of life compatible with this abnormity. The pulmonary vessels in these cases are given off by the aorta, and the systemic and pulmonary veins terminate in the single auricle. In this variety of malformation the arrest of development takes place early in fœtal life. Cases in which the heart consists of only three cavities are not so rare as the preceding. They denote an arrest of development occurring at a later period of intra-uterine existence. Persons with this malformation have lived for several years, but, in general, death takes place within a few weeks or months. The cavities are two auricles and a single ventricle, the latter presenting sometimes a rudimentary septum. These cases differ as respects the arrangement of the primary vessels. In some, both the aorta and pulmonary artery spring from the single ventricle; in others the aorta gives origin to the pulmonary vessels, or if the pulmonary artery exist, it is in a rudimentary form, and the blood is supplied to the lungs through the ductus arteriosus. Deficiency of the ventricular and auricular septa, separately or combined, is a variety of malformation vastly more common than the two varieties just noticed. When the ventricular septum is more or less deficient, the imperfection generally, but not invariably, exists at the base. The explanation of this is, the division of the cavities is here effected last during fœtal life. Hence, this form of malformation indicates an arrest of development, occurring at a period still later than in the two previous forms. In the fully developed organ there exists, at the upper part of the septum, a triangular space in which the ventricles are only separated by the endocardium and fibrous tissue on the left side, and by the lining membrane and a thin layer of muscular substance on the right. The average length of the sides of this triangle is about seven lines, and the base is somewhat wider. This is frequently distinguished as the *undefended space.* It has been a question with pathologists whether, in a certain proportion of the instances of deficiency of the interventricular septum at the point just referred to, it was not the result of rupture or perforation after birth. Bouillaud (the name is uniformly in the work spelled Bouillard) contends that it is frequently attributable to disease. The author concurs in the opinion that it is thus attributable in a certain proportion of cases, but in a smaller proportion than claimed by the French pathologist just named. Deficiencies in both the ventricular and auricular septa are usually associated with other defects, and especially with obstruction at the pulmonic orifice. Dr. Peacock attributes the former to the latter. The effects of pulmonic obstruction on the blood-currents prevents that complete separation of the cavities (exclusive of the foramen ovale) which should occur during the latter part of fœtal life. Considerable deficiency of the partitions between the ventricles or auricles is not uniformly attended by marked symptoms referable to the heart or circulation. The author refers to several instances illustrative of this fact, the patients presenting few or no indications of the existence of any heart affection. The reader will find a valuable collection of examples of these malformations described in the catalogue of the cabinet of the Boston Society for Medical Improvement. Instances exemplifying in a striking manner the fact just stated, are contained in that catalogue. If the deficiency in the septa be associated with mal-arrangement of the primary vessels, the consequences are far more serious. The pulmonary artery may, as well as the aorta, spring from the left ventricle. Virtually, in such an instance, the heart consists of three cavities. The left ventricle becomes greatly enlarged, and the right ventricle proportionably atrophied. Life has continued for years under these circumstances. In other instances the aorta, as well as the pulmonary artery, arises from the right ventricle. The pulmonic orifice in these instances is usually obstructed ; the foramen ovale remains open, and the ductus arteriosus occasionally continues pervious. The various malformations falling under this head are illustrated by several cases given in full, and the appearances after death represented by plates. The author appends to his cases a long list of those contained in other publications.

Obliteration of the pulmonary artery would at first seem to be an abnormity incompatible with life. Several cases, however, have been reported in which death did not occur for several years. In connection with this malformation, the interventricular septum is often defective. The right ventricle becomes greatly dilated and hypertrophied. The ductus arteriosus generally remains pervious, and the pulmonary vessels are supplied through this channel. If the ventricular septum be complete, the foramen ovale continues open. As the author remarks, the open foramen ovale and the defect in the septum between the ventricles, instead of adding to the danger, afford relief to the overloaded right auricle and ventricle, without which it would be impossible for life to be prolonged, except for a very brief period.

The presence of a supernumerary septum in the right ventricle constitutes another variety of malformation. This superfluous septum may be so far complete that the heart appears to have three ventricles. In its effects this malformation is essentially similar to those involving obstruction or obliteration of the pulmonic orifice; with the latter, indeed, it is often associated. The foramen ovale and ductus arteriosus, either or both, are generally pervious, and the septum between the ventricles is in some instances deficient. The duration of life varies according to the amount of obstruction. In the cases given, death occurred between the ages of nine and thirty-six years.

Of the malformations preventing the heart undergoing the changes which should ensue after birth, the most important are patency of the foramen ovale and of the ductus arteriosus. These passages peculiar and essential to the circulation in fœtal life, remain patent, one or both, after birth, in most of the instances in which the ventricular septum is more or less deficient, and, in general, their patency is associated with obstruction at or near the pulmonary orifice. When the latter condition co-exists, the right ventricle frequently becomes hypertrophied, but this rule is not without exceptions. If the communication between the auricles and primary arteries be free, the right ventricle, instead of being enlarged, is sometimes found quite small, evidently atrophied, the blood finding a free outlet through the fœtal passages, thus preventing accumulation in the right ventricular cavity. It is to be remarked that although in the great majority of instances of open foramen ovale, obstruction at or near the orifice of the pulmonary artery is associated, the rule is not invariable. Hence, this obstruction, although a frequent, is not the sole cause of the persistence of the communication of the auricles after birth. Patency of the ductus arteriosus is a conservative provision in cases of obliteration of, or great obstruction at the pulmonic orifice. It is equally so in certain instances in which the foramen ovale becomes closed during fœtal life. This duct remains pervious in some cases in consequence of obstruction at the aortic orifice, and also at the left auriculo-ventricular aperture. These co-existing malformations account for the persistence of the open duct in the great majority of cases, but the latter is sometimes observed when it is not thus to be accounted for, existing independently of other abnormities to which a relation of dependency can be traced.

Under the head of "Malformations not interfering with the Functions of the Heart, but laying the Foundations of Disease in after Life," are embraced deficiency in the number of the semilunar valves on the one hand, and excess in the number of segments on the other hand. Deficiency in the number of valves is of more importance, as tending to disease, than excess. In fact, it does not appear that the latter leads to any serious consequences. The former involves, in certain cases, insufficiency and regurgitation, and, as the author thinks, a disposition of the valves to take on disease greater than if no malformation existed. Union of the different segments of the tricuspid and mitral valves is found not infrequently in autopsical examinations, and in a certain proportion of these cases it is due to disease of intra-uterine life. The proportion of cases in which the disease dates from a period anterior to birth is undoubtedly greater in the instances of union of the tricuspid than of the mitral valves, for the liability of the latter to take on disease after birth is vastly greater than that of the former. Dr. Peacock is of opinion that this difference in tendency to valvular disease between the two sides of the heart, which is so marked after birth, is reversed during fœtal life; that is, he thinks the tricuspid valves are as much more likely to take on disease before as the mitral valves are after birth.

The malformations consisting in the irregular development of the primary vessels constitute a class which, in general, are not compatible with a considerable duration of life. Extraordinary abnormities falling in this division are occasionally met with. The author cites examples of transposition of the aorta and pulmonary artery, and of the descending aorta given off from the pulmonary artery. Of sixteen cases in which one or the other of these transpositions existed, in three life was prolonged beyond the third year, death taking place in the others after a few weeks or months.

Of the causes of death in the various forms of malformation, the most frequent are—1. Cerebral disturbance resulting from the defective aeration of the blood and congestion of the brain; and, 2. Imperfect expansion, collapse, and engorgement of the lungs. It is worthy of note that serious dropsical effusions, so common in morbid lesions of the heart, occur less frequently than would be expected from the obstruction to the circulation incident to many of the malformations. Death not unfrequently occurs from tuberculosis in the cases in which life is prolonged for several years. This statement is in opposition to the doctrine laid down by Rokitansky, viz., that "all cyanoses, or rather all forms of disease of the heart, vessels, or lungs, inducing cyanosis of various kinds and degrees, are incompatible with tuberculosis, against which cyanosis affords a complete protection." Of fifty-six cases in which patients affected with different forms of malformation survived the age of eight years, in nine tuberculosis became developed, being a ratio of 16.07 per cent. This fact is striking and valuable. It should be added that in six of the nine tuberculous cases cyanosis existed in a marked degree. The fact certainly militates against the incompatibility of tuberculous disease and venosity of the blood, as asserted by Rokitansky. It is, however, certain that diseases of the heart and phthisis are not often associated. Is there a law here which is applicable to morbid conditions, and not to congenital malformations? This is a question to be settled by further statistical data.

The nature of the connection existing between cyanosis (*morbus cæruleus*) and malformations of the heart has been much discussed, and is still open for discussion. According to Morgagni, the cyanotic phenomena are attributable to general congestion of the venous system, caused by obstruction at the origin of the pulmonary artery. Hunter attributed the appearances to intermixture of venous and arterial blood in consequence of abnormal communication between either the auricles or ventricles, or both. This was the current doctrine until, within the past few years, the explanation of Morgagni has been revived by several distinguished pathologists—Louis and Valleix in France, Hasse and Rokitansky in Germany, Joy in England, and the late Dr. Moreton Stillé of this country. By none of the other writers named has the subject been discussed so fully and ably as by our countryman.[1] Many distinguished pathologists, however, still adhere to the Hunterian theory. Dr. Stillé established the fact that cyanosis may exist without the intermixture of the currents of blood. This is sufficiently established with regard to congenital malformations. It is also proved by diseases, for certainly phenomena essentially cyanotic are incident to various affections. He also established that complete intermixture of the two kinds of blood may take place without cyanosis being produced. These two points suffice to show that the connection between the occurrence of cyanosis and the admixture of venous and arterial blood is not constant enough to prove that the existence of the one involves the existence of the other. In other words, cyanosis must in some instances be due to some other cause than this. The analysis of a considerable number of cases in which the condition of the pulmonary artery was ascertained (viz., in 62), showed the existence of contraction, imperviousness, or some obstruction, in 53; and in the other cases there were conditions present which would give rise to venous congestion. These facts render it almost certain that obstruction of the circulation through the pulmonary artery may give rise to cyanosis. But do they warrant the conclusion that this obstruction is in all instances the origin of the affection, and that in no instance is it due to the admixture of venous and arterial blood? We think this question must be answered in the negative. With our present knowledge, neither the theory of Morgagni, advocated by Stillé and others, nor that of Hunter, is to be adopted to the entire exclusion of the other. The argument of Dr. Walshe, adduced by the author, possesses much force. He says:—

> "How is that doctrine (that cyanosis depends on congestion of the venous system) reconcilable with the fact that the most intense obstruction may occur in the adult without inducing true cyanotic discoloration? How comes it, too, if communication between the two sides of the heart be so unimportant, that in five only out of seventy-one cases of cyanosis collected by Stillé was such communication wanting?"

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[1] On Cyanosis, or Morbus Cæruleus. By Moreton Stillé, M. D. Amer. Journ. of the Med. Sciences, N. S., vol. viii , 1844, p. 25.

Dr. Peacock adopts the theory advocated by Dr. Stillé. He brings forward cases exemplifying, on the one hand, the production of cyanosis by malformations involving obstruction, but no communication between the two sides of the heart; and, on the other hand, the freest possible admixture without cyanotic phenomena. These facts, however, do not prove conclusively that in no instances is cyanosis due to admixture of the two kinds of blood; nor do they show that this admixture is not, in some cases at least, an important element in conjunction with obstruction to the pulmonary circulation. Much as this subject has been elucidated, there is still ample scope for further researches. The condition of the capillary vessels, it is very probable, exerts more or less influence on the production of cyanosis.

We quote the author's words with reference to this point:—

> "It is probably necessary to the production of cyanosis, that, as suggested by Dr. Chevers, the obstruction to the circulation should either have been present before birth, when the capillary vessels are naturally more capacious than in the adult; or that it should have existed before the full development of the body was attained, and while the entire vascular system was more readily dilatable; or, at least, that it should have been of long duration, so that the capillary vessels may have become greatly expanded."

To determine in early life that malformation of some kind exists, is usually not difficult, provided the abnormity be of a nature and sufficient in degree to induce marked disorder. Palpitation, dyspnœa, or cyanosis, existing from birth, or developed shortly afterwards, and either persisting or recurring more or less frequently, point clearly to a congenital difficulty. To determine the particular kind of malformation, however, is a problem in diagnosis not always easy. It is sometimes impracticable. With reference to the latter discrimination, it is important to bear in mind that out of a given number of malformations after the age of twelve years, in a very large proportion there exists contraction at the pulmonic orifice. Of 39 cases analyzed by Dr. Peacock, obstruction to the passage of blood into the pulmonary artery existed in 32. It is also to be kept in view that in a large proportion of the cases in which obstruction at the pulmonic orifice exists, either there is patency of the foramen ovale, or deficiency of the auricular or ventricular septa, or both. If pulmonic obstruction be determined, the chances are that the last-mentioned malformations coexist. Guided by the law of probabilities, if a person survive several years with manifestly some cardiac malformation, we shall seldom err in presuming that there exists pulmonic obstruction. But physical signs may convert this presumption into a conclusion almost positive. A bellows murmur referable to the pulmonary orifice points to this as the seat of an abnormal condition. That a systolic murmur may be referred to the pulmonary orifice is certain. The maximum of the intensity of the murmur will be at the base of the heart on the left side of the sternum, or the murmur may be limited to this situation. It will not be propagated into the carotids. It is highly probable that attention to the pulmonary second sound of the heart will afford additional aid in the diagnosis. In connection with a murmur referable as first stated, in a large proportion of cases there will be present the physical evidence of enlargement of the right ventricle. It is doubtful, as the author remarks, whether a regurgitant current from the pulmonary artery is ever strong enough to develop a diastolic murmur. It may possibly do so in cases in which the right ventricle is greatly hypertrophied. Communication of the two ventricles through an aperture in the septum gives rise to a murmur. A murmur thus produced will not be propagated either along the course of the aorta or pulmonary artery, and will still have its maximum of intensity at or near the base of the heart. By these points its source may be determined with considerable confidence, but not with positiveness, for intra-ventricular murmurs are occasionally incident to disease which cannot be traced either to the arterial or auriculo-ventricular orifices by the ordinary rules of localization. The passage of blood through an open foramen ovale, or a defect in the auricular septum, probably never gives rise to murmur. The clinical study of cases of malformation, with respect to the physical signs, is highly interesting, and claims more attention than it has as yet received.

The general principles of treatment in cases of malformation are embraced in a few words. They consist of measures to protect against cold; avoidance of over-exertion and great mental excitement; together with such palliative measures as the particular circumstances in individual cases may indicate.

We have embodied in this analytical review those points pertaining to malformations of the heart, contained in Dr. Peacock's work, which seem to us most interesting and important. We have done this, consulting brevity as much as possible, for the reasons stated at the outset. An additional reason is, the work may not be republished in this country, and will therefore be accessible to but few American readers. In conclusion, Dr. Peacock has displayed, in the preparation of the work, not only a thorough and philosophical acquaintance with the subject, but a tact in arrangement and condensation which it is difficult for an author to exercise. He has given a comprehensive and satisfactory exposition of existing knowledge relating to an extensive field of research, within the limits of a small volume. A. F.

BIBLIOGRAPHICAL NOTICES.

Art. XXII.—*The Dispensatory of the United States of America.* By George B. Wood, M. D., Professor of Theory and Practice of Medicine in the University of Pennsylvania, &c.; and Franklin Bache, M. D., Professor of Chemistry in Jefferson Medical College, &c. Eleventh edition, carefully revised. Philada.: J. B. Lippincott & Co., 1858. 8vo. pp. 1583.

This useful and highly popular work has just been reissued, having reached the eleventh edition since 1832, when first published. Its success is perhaps unprecedented in the whole range of medical literature. How many future editions will be issued cannot be foretold; as the book, however, supplies a want of the medical and pharmaceutical professions, their limit will depend solely upon the working capabilities of the indefatigable and learned authors of it. The *United States Dispensatory* has become an indispensable appendage to the shop and the office from the position it holds to the pharmacy of the country. A pharmacopœia is a national work; it is of necessity authoritative within the limits of the country for which it is intended, and whether directed by government or originating from the collective exertions of medical men and pharmaceutists, ought to receive general approval and adoption. The work under consideration is the enlarged commentary upon our national pharmacopœia. Without it that work would be a dead letter; it could be but imperfectly comprehended, and would long since have been lost in the confusion and incompatibility of the numerous codes of a similar nature with which our imported medical literature abounds, or perhaps choked by rival formularies of indigenous production. We do not hesitate to declare that without the *U. S. Dispensatory* the *U. S. Pharmacopœia* could not have had more than an ephemeral existence, and in confirmation of our opinion would appeal to the history of the latter during the first periods of its existence.

With so large a book before us, devoted to so many separate subjects coming under the heads of materia medica and pharmacy, it is not our purpose to go into an extended notice; the subject is too broken for an essay in the order of a review; we shall simply content ourselves with pointing to portions of the information contained as worthy of attention.

The work has undergone changes entailed by the elaboration bestowed upon it in the course of so many editions, and still it seems to have been, in the advance of science and the prosecution of research, susceptible of advantageous practical modifications. In the second edition, an appendix was introduced "containing an account of drugs not recognized by the American or British Pharmacopœias, yet possessing some interest from their former or existing relations to medicine and pharmacy." This continued to enlarge in ensuing issues, until in the present it is so extensive as to have been transformed into Part 3d of the book, while an appendix has been formed from the presentation of various tables and other subjects of interest. As is remarked in the preface, "a precision has thus been given to the arrangement of the *Dispensatory* which was at first wanting."

As the *Dispensatory* is not solely intended to enforce and explain a single system of pharmaceutical practice, but while giving preference to the *United States Pharmacopœia*, and endeavouring to secure its universal adoption, contains all the information of the day upon the subjects embraced by it, the rules and formularies of other standards are introduced, by which a comparison may be instituted between them and our own. In the use of synonymous terms, caution is requisite lest error may occur. This has been guarded against as regards the British pharmacopœias, as we are told that, "it will be seen by consulting the formulas of the several pharmacopœias that care has been taken in all cases in which the result would be affected by a misunderstanding of the denominations of weight employed, to refer within brackets to their proper signification. Thus, the pound and ounce of the Dublin processes are designated as belonging to the *avoirdupois weights*, the value of which is indicated by a table in the appendix. The measures now employed by all the British colleges are the imperial gallon and its subdivisions, differing more or less in value from the similar denominations of the wine measure used in the U. S. Pharmacopœia; and it has been necessary, on this point also, to guard against error by a particular reference to the fact, in every formula in which entire accuracy is essential."

Within the last few years much has been said with respect to the chemistry of cinchona barks. Various experimenters have laboured to unveil the mystery investing this portion of quinology, and the subject would appear to be emerging from the intricacies surrounding it. In fact, in a commercial point of view, the light in which the several varieties of barks are regarded, has undergone entire alteration, and the distinctions predicated upon value so upturned as to entail a new arrangement in the Pharmacopœia. What have been regarded as non-officinal, now constitute the most important to commerce. In this edition, the account of the chemistry is more satisfactory than we have hitherto had it. We extract the following sentence for the purpose of commencing the story:—

"Besides *quinia* and *cinchonia* there can be little doubt that two other alkaloids, *quinidia* and *cinchonidia*, as they are denominated in this work, exist in Peruvian bark, and it is highly probable that, though found most abundantly in the pale, and some of the Carthagena barks, they are contained at least occasionally, to a greater or less extent, in all; while two others, *quinicia* and *cinchonicia*, if they do not pre-exist in the barks, result from the processes employed in the separation of the alkaloids just mentioned."

The specification of these six alkaloids is due to M. Pasteur, announced in 1853; the phraseology above adopted is that of Dr. Wood, in order to comport with the nomenclature of the U. S. Pharmacopœia.

With regard to the first two alkaloids we have nothing to say; they are well known. The last four are interesting, as they will be most liable to perplex the student. In the shops is sold quinidia and its salt the sulphate, and experiments have been made favourable to its use in the treatment of intermittent fever. According to the present work, founded on the statements of Pasteur, this is either a complex substance, constituted of *quinidia* and *cinchonidia*—the latter by far in largest proportion—or consists entirely of the latter. A new phraseology is therefore necessary for the commercial salt; or, in other words, a sulphate of quinidia should be called sulphate of cinchonidia.

True, quinidia is isomeric with quinia, and in its chemical relations resembles it, but differs in its greater facility of crystallization, in its much less solubility in ether, and in its influence on polarized light; quinidia producing deviation to the right, and quinia to the left.

Cinchonidia is isomeric with cinchonia, agrees with that alkaloid in forming anhydrous crystals, and in not producing the green colour with chlorine and ammonia. It differs in being more soluble in ether, and in producing deviation to the left instead of to the right by polarization.

The point then impressed upon us by reading the account is, that the commercial quinidia is compound, constituted for the most part of the cinchonidia alkaloid. It has been examined by H. G. Leers, and his account is given by Dr. Wood. In performing the experiment with Herepath's test, we have been struck with the resemblance of the precipitate to that with cinchonia.

Quinicia and cinchonicia seem to be produced from quinia and cinchonia by heat, and may therefore be regarded as products. For the minute details connected with this refined subject, we must refer to the book itself.

Under the head of Colchicum we find some new information. It appears that Geiger and Hesse had studied particularly the alkaline principle *colchicia*. It has recently engaged the attention of L. Oberlin. Upon repeating the process of Geiger and Hesse, he was unable to obtain a crystallizable product; but he obtained a principle which he proposes to call *colchicine*, which is crystallizable. Here is a knotty point for the organic chemist, and, like the cinchona alkaloids, requires more study. We have our grains of misgiving with respect to these refinements, and suspect that organic physiology has something to do, in anticipation of these purely chemical distinctions.

Under the head of Copaiba is an account of an interesting terebinthinate substance, which, in the London market, has been offered for that drug. It is from *Dipterocarpus turbinatus*, and is called *wood oil—gurjan balsam.* With respect to copaiba itself, no distinctions have been made predicated on its source or botanical origin. It appears to us this could be done, at first approximatively, to be verified or corrected by observation. It is a subject of interest.

Part second of the work, devoted to preparations, is in itself a complete treatise upon pharmacy. It might be printed apart, and take the lead as a pharmaceutical compendium. In it shine out the order and symmetry of the pharmacopœia; so well have the text and the commentary been blended, that it cannot be otherwise than seen that the same minds have been engaged upon both. In fact, this part is the most elaborated portion of the book, and has done its work in establishing a national pharmacy.

The third part has been expanded far beyond the limits which were given to it as the appendix. Many of the articles have been rewritten or extended, and a very considerable addition has been made of new articles. We have counted forty subjects introduced here, which were not treated of in the last edition, or have since come into importance. The authors assure us that their great difficulty has been to prevent the work from swelling beyond the limits of a single volume. Yet with the effort to curtail their materials "by aiming at the greatest conciseness of expression consistent with clearness in regard both to the old and the new matter, and by care to avoid any waste of space in the method of arranging the materials for the press," have nevertheless "found it necessary to increase the dimensions by about one hundred pages, in order to meet the exigencies of advancing knowledge."

In conclusion, we freely express the opinion that the authors have to the fullest extent succeeded in their desire to "let nothing escape them which could add to the value of the work, and make it what it aims to be—a representative of the existing state of pharmacy, and a safe guide for the student and practitioner." J. C.

Art. XXIII.—*The Institutes of Medicine.* By Martyn Paine, A. M., M. D., LL. D., Professor of the Institutes of Medicine and Materia Medica in the University of the City of New York, etc. etc. 8vo. pp. 1095. Harper and Brother: New York, 1858.

When a somewhat voluminous work on the Institutes of Medicine, like the one before us, reaches a fourth edition, this fact may in general be received as *prima facie* evidence that it possesses some degree of value. This is certainly true in the case of Dr. Paine's treatise, which presents, throughout, ample evidence of the general erudition of its author, his habits of close investigation, and his intimate acquaintance with the subjects of which he treats, and with the views entertained by others in respect to them. A degree of originality and independence of thought pervades all his teachings, whether these have reference to the vital conditions and functions of the human organism, the laws by which these are governed, or to the nature, causes, and tendencies of disease, and the curative measures by the agency of which this may be best conducted to a favourable termination.

The institutes of medicine, as presented by Dr. Paine, whether we receive them as true or reject them as false, are nevertheless based upon a truly philosophical investigation, aided by all the accumulated light derived from the observations, experiments, and reasoning of preceding and contemporary authorities, of the physiology, pathology, and therapeutics of the human subject. We cannot deny, however, that they contain, intimately blended with important truths, numerous errors, and a host of positions and conclusions of, at least, very doubtful accuracy, with a preponderance, it is true, of the former.

The arrangement of the work is somewhat objectionable, while its style is diffuse, and destitute of the precision and clearness desirable in a didactic treatise. There is, also, throughout its several departments, a prevailing polemic character, which renders it less a luminous exposition of the particular views of the author on each of the subjects it embraces, with the facts and arguments upon which those views are founded, than a criticism of the doctrines advanced by others in opposition to what he believes to be the truth. To a certain extent, the criticism alluded to was unavoidable, but it is indulged in by Dr. Paine far beyond, we are of opinion, what the necessities of the case demanded.

Dr. Paine is a thorough vitalist. In the domains of physiology, pathology, and therapeutics, it is life, life only, that acts and is acted on. He endeavours to show that vitality is inherent in all parts of the animal organism, and that by this inherent vitality are carried on all the organic functions; that the nervous power or influence contributes nothing more toward the functions of nutrition and secretion than the exercise of a modifying, exciting, or depressing influence upon them, through which the products of those functions are perfected in their character, or are increased, or diminished.

The eminently vital doctrines advocated by Dr. Paine lead him, necessarily, to ultra solidism. The doctrines of humoralism, he rejects in toto. The normal and abnormal states of the blood, and of the products elaborated from it, are, with him, simply indications of the normal or abnormal condition of the solid organs. These latter must, he maintains, always take the initiative step in the production of both the healthy and morbid processes of the living body. The only means, therefore, of restoring the normal condition of the fluids, when these are diseased, is to establish healthy assimilation; to bring back thus, to their natural condition, the various tissues and organs, upon the deranged functions of which the abnormal condition of the blood, and of the secretions and excretions is dependent. The entire results of the investigations into the morbid states of the fluids, by the most distinguished chemists of the present century, he rejects, as being devoid of evidence as to their accuracy; as throwing not the slightest light upon the nature or causes of disease; and as being unadapted to serve in a single case as guides to the proper management of the morbid conditions of the system.

It is, we confess, somewhat cheering to meet with one of the high intellectual endowments of Dr. Paine, who, at the present day, when the doctrines of physiologists, pathologists, and therapeutists, are alike verging into materialism, when the organic functions, at least, of the animal organism, are all referred to a mere modification of the same action and reaction which occur in brute matter, has sufficient courage to raise his voice in defence of the vitality of the system; in recognition of the fact that our organs are built up and maintained in a healthful condition for the regular performance of their appropriate functions by a principle which we denominate life, and by which the material elements of the animal organism are almost entirely removed from out the control of those merely physical laws to which, as dead matter, they would necessarily be subjected.

"The principle of life, or life itself," says Dr. Paine, "may be summarily defined as a cause, consisting of certain specific properties, appertaining to organic matter, capable of being acted upon by external and internal physical agents, by the nervous power and by moral causes, and of thus being brought into a state of action itself, and in no other way. Its action is exerted upon the organism, and upon certain external substances, as upon food. In the former case, its action gives rise to motion, upon which all the functions depend; in the latter, its operation is through the medium of the gastric juice in animals, but is more obscure in vegetables. The principle is creative, so far as it combines the elements of matter in peculiar modes, and arranges the compound molecules into tissues and organs, and in modes identical with those which came originally from the creative energy of God, who thus far imparted to the principle of life a formative endowment. The principle is capable of protecting the matter which it endows against the decomposing influences of all the physical agents by which it is naturally surrounded, while the extinction of the principle exposes the organic substance to an intestine chemical dissolution, and to the decomposing action of surrounding agents, which proceeds with a rapidity without parallel in the natural state of the inorganic world. The principle is also susceptible of certain limited changes from the influence of causes, moral and physical, which constitute the essence of disease, while other causes are capable of modifying the morbid changes in such wise that the principle of life takes on a restorative energy, through which it recovers its normal condition. The properties of the vital principle are variously and naturally modified in different parts, and undergo natural modifications at certain stages of life, giving rise to changes of organization, &c."

"The vital principle is a whole, in respect to its substantial nature, and is common to vegetables and animals. Organic matter, or an organized substratum is necessary to its existence, and, since the perpetuity of organic matter depends upon the vital principle, it is manifest that both were brought into being without the agency of each other. The vital properties cannot be generated by matter, since upon them the existence of organization depends, nor is there a single phenomenon that indicates their presence in inorganic substances, nor can they be produced by the force of physics, since these are perfectly incapable of restoring the structure, or even its elementary composition, after the organized matter is decomposed, or, of reanimating the dead machine before decomposition has begun; while, on the other hand, these are the forces which lay waste the structure, and only so, after the signs of the vital properties shall have totally disappeared."

Such is the all comprehensive vitalist creed of Dr. Paine; recognizing from the first moment of animal existence to its close, the influence, operation and governing power of life, in all the organic functions of the body during health —in the phenomena and progress of disease—and in the remedial efforts and processes, by which the disordered functions and deranged structures are restored to their normal conditions. Making thus, as Dr. P. expresses it, vitalism the "universal foundation for every fact and every rational principle in physiology, pathology, and therapeutics, and, therefore, uniting all the principles relative to life, health, disease, and the art of medicine into one consentaneous, harmonious whole."

It is very certain that the author, in his zeal to overthrow the chemico-physical doctrines that now pervade almost every department of the institutes of medicine, has been carried much too far, especially in his adoption of the views of the ultra solidists. He denies that the blood can, by a morbid change produced in it from any cause whatever, whether by a derangement of its composition, the result of imperfect hæmatosis, or by the introduction into it of foreign and deleterious agents from without, become a cause of disease. All the morbid changes observable in the blood are ascribed by him to the alterative influence of direct or reflex action of the nervous system beyond the direct seat of operation of any physical agent. He applies this same alterative influence of direct and reflex action of the nervous system, equally to the solution of all problems in pathology and therapeutics, and to the explanation of the modus operandi of every morbific and remedial agent whether physical or mental. It forms, in fact, the sole basis of Dr. Paine's exposition of the causes, nature, and progress of diseases, whatever may be their seat or character, and of the action of the means adapted to their therapeutic management.

"If," says Dr. P., "the blood be rendered morbid by morbid states of the solids, it never becomes morbific, since there is a progressive adaptation of the vital changes in the solids to such as the solids induce in the blood. And so of various morbid secretions in relation to the parts by which they may be produced."

"Again, it is one of the most important laws in medicine, that the susceptibility of tissues and organs to the action of remedial agents is more or less affected by disease. Many agents which operate powerfully in certain morbid states, and in certain doses, both locally and sympathetically, may be perfectly inert in the natural states of the same organs. And so of the natural agents of life. The greatness of the effects, also, will depend very much upon the nature and intensity of disease. The same principle applies to the impressions which are made by many remedial agents upon existing states of disease, or upon organs in their state of integrity, by which the diseased or healthy parts are increased in their susceptibility to the subsequent action of the same or other remedies, or to morbific causes. It is, therefore, one harmonious system of laws throughout. Were it, indeed, otherwise, remedial agents could have no existence, and disease, of course, could receive no help from art. These, also, are the beginning of a long series of facts, which show us that the effects of all agents, whether morbific or remedial, may be traced to the peculiar impression which they exert upon parts with which they come in contact, and by which, also, we overthrow the whole system of chemical physiology, the humoral pathology, the doctrines of debility, and of cure by the absorption of remedies."

Could it be clearly demonstrated that the blood is, strictly speaking, formed and elaborated solely by the solid parts of the animal body, and so long as it circulates in the living vessels is held invariably under the control of the latter —the solids always acting upon it and it never upon the solids—so that no change whatever can be effected in it save through their agency, then we admit that we should be forced to receive the doctrines of the ultra solidists as truths in their application to physiology and pathology, and to therapeutics. But we must insist that, neither the exclusive dependence of the entire process of hæmatosis upon the action of the solids, nor the propriety of referring every change that occurs in the blood to that action alone, can with propriety be said to be conclusively established.

Much more, unquestionably, has been ascribed to morbid states of the blood in the causation of disease than careful observation and well authenticated facts will warrant. There can be no doubt, we think, that, in many of the cases in which disease is supposed to be produced by the introduction into the blood of some deleterious principle from without, no such thing can be shown to take place, but that the action of the morbific agent is primarily upon the nervous system, and through it secondarily upon the blood, with which latter it never comes in contact. This we believe to hold true in reference to all or nearly all the idiopathic fevers. We should, nevertheless, be inclined to call these blood diseases, inasmuch as, notwithstanding the existence of a deranged or abnormal action of the nervous system is strongly indicated by their entire phenomena, still, a morbific condition of the blood is in most of them the prominent pathological fact. Even in those cases in which the blood has become charged with matters deleterious to the system, in consequence of the disordered state of one or other of the depurative organs, it is to the morbid state of the blood that we must refer the symptoms of disease which present themselves, and the chief cause of the danger attendant upon such cases; these cannot certainly be said to have a direct dependence on the morbid state of the solids. Dr. Paine, it is true, denies that urea, bile, or any other of the products of excretion or secretion can accumulate in the blood in consequence of the defective action of the appropriate organs, as they have not, according to him, any existence in the blood, but are formed by the excretory or secretory glands: He denies, also, that bile, urine, or any other excreted fluid can be carried into the blood by absorption, laying down the general proposition, that no deleterious agent or remedy is absorbed unless it first inflicts disease upon the absorbing vessels, and then, if at all, but sparingly, while it is quickly carried off again by the kidneys. He conceives that the absorption of morbific and remedial agents is disproved in those instances where their effects are enduring or long delayed, as miasmata, mercurials, the hydrophobic poison, etc., by the frequent renewal of the blood, while the absorption of all active agents is disproved by their not acting upon the highly irritable heart when they are known to act with violence upon other organs.

That the condition of the blood must become abnormal when the excretory organs cease to perform their functions with sufficient activity, cannot, we think, be denied, inasmuch as the depuration of the blood, and the completion of hæmatosis, is dependent upon the action of these organs; nor do we believe it possible to doubt the resorption of the colouring matter, at least of the bile, in cases of jaundice.

Dr. Paine denies that any direct medication of the blood can take place; in other words, that, by any therapeutic agent, acting immediately upon the blood, a change can be effected in the condition of that fluid, so as to bring it back, when diseased, to its normal condition. This, he maintains, can be effected only by restoring to the solids their healthful condition and functions. In this, to a certain extent, we coincide with the author. We have always doubted the correctness of the chemical doctrines in therapeutics; at the same time, however, we think the fact can be very clearly established that the blood may be medicated, that is, that it may be so imbued with substances having remedial properties as to render it adapted to effect a salutary impression on those tissues and organs which are the seats of disease.

According to Dr. Paine, the whole philosophy of the operation of remedial and morbific agents rests upon physiological principles, whether as manifested through the medium of the nervous influence, or in their more independent action upon the organic constitution of parts with which they may come into contact, but differing from the natural stimuli of life not only in the greater manifestation of the nervous influence, but in the *alterative* effects which it exerts.

Lying at the foundation of both remedial and morbific action is the mutability of the organic properties, which, in being designed for a variety of useful purposes, such as the progressive changes of organization from infancy to manhood—gestation, lactation, etc., is necessarily subject to deleterious influences, from numerous external and internal causes, while others of a different nature are, for the same reason, and through another great law—the increased susceptibility of morbid states to the action of the latter class, in such regular modes as shall not act profoundly—capable of substituting other pathological changes, which, through another great law—the inherent tendency of the organic properties to maintain the normal state—subside spontaneously into the natural physiological conditions.

That all remedial agents act as alteratives, if we understand by the term alterative an agent which modifies the vital condition or action of the tissues or organs, sustaining, exciting, or depressing it, we admit, but we cannot perceive the correctness of the position assumed by the author, that "remedies operate like morbific causes," and that, in the cure of diseases, they institute "a succession of *pathological* changes," which displace the morbid conditions present. The use of similar language has a tendency to rather mystify than to throw light upon the modus operandi of therapeutic agents.

Throughout the several divisions and sections of the treatise before us, amid much that is mystical, indefinite, and inconclusive, there are scattered views of a most interesting character, many bearing the character of truth, and having an important practical bearing. To point out all that the volume offers of interest or of value, or to present a running commentary upon those even of the author's teachings that we consider most worthy of notice, would extend the present article to an unreasonable length. This arises, in a great measure, from his having adopted a somewhat defective method in the development of his peculiar views upon the several subjects embraced within the circle of the institutes of medicine, in consequence of which a fair exposition of the leading points inculcated by Dr. Paine would require a somewhat extended analysis of the entire volume, or, at least, of a very considerable portion of it; a task, which, however much we might feel inclined to undertake, we have not the time properly to execute; nor could we with propriety occupy the space in this department of the *Journal* that would be necessary to present its results.

We consider the treatise to be one well worthy of an attentive study on the part of every advanced student and practitioner of medicine, to whose notice we earnestly recommend it. Although far from being inclined to indorse the accuracy of every doctrine advanced by the author, nor the chain of reasoning by which he attempts its support, we are, nevertheless, convinced that his prelections, from the amount of truth set forth in them, and the *vitality* by which they are pervaded, if they do not actually convey sound views on everything that relates to the philosophy of medicine, cannot fail to lead, at least, to a correct basis for the establishment of such views. The strong conservative predilections of Dr. Paine, which induce him to subject every new observation and theory in medicine to the severest scrutiny, and to refuse its admission until positively established, can have no other than a favourable influence upon his readers, by teaching them to be *progressive* only in the road of positive truth.

D. F. C.

ART. XXIV.—*Puerperal Fever; its Causes and Modes of Propagation.* Read before the New York Academy of Medicine, at the opening of the Discussion on Puerperal Fever, on the 4th of April, 1857; and published by consent of that body. By JOSEPH M. SMITH, M. D., Professor of Materia Medica and Clinical Medicine in the New York College of Physicians, etc. 8vo. pp. 29. From the New York Journal of Medicine, for September 1, 1857.

Remarks on Puerperal Fever, before the New York Academy of Medicine, October 7, 1857. By B. FORDYCE BARKER, M. D., Professor of Obstetrics and Diseases of Women and Children, in the New York Medical College, etc. etc. 8vo. pp. 23. From the American Medical Monthly for November, 1857.

THE etiology and general pathology of puerperal fever are subjects that press themselves with no little force upon the attention of every practitioner of medicine in this country. The disease is one of frequent occurrence; generally, as an epidemic, confined within comparatively narrow limits. It is always very rapid in its course, and, even in its mildest form, difficult to manage, while it often assumes a type of the utmost malignancy, destroying, with a frightful certainty and speed, the life of those in whom it is developed. Under all circumstances, puerperal fever must be ranked among the most formidable of the maladies which the physician is liable at any moment to be called upon to treat. In consequence of this, added to the very great discrepancy of opinion as to the true character and proper treatment of the disease prevailing among those who have undertaken its investigation, the young practitioner always comes to its treatment under circumstances the most painful and disadvantageous; doubtful as to its true nature, and uncertain as to the course of treatment it is his duty to pursue to arrest its fatal course.

The diversity of views that exists in respect to the pathology of puerperal fever can scarcely be ascribed to any actual obscurity or startling irregularity in its phenomena, or to any confusion or want of significance in its morbid anatomy, as revealed by the dissections of different observers. They have arisen rather, we apprehend, from an error in the logic of many of those who have furnished us with accounts of the disease, that has led them to form erroneous conclusions from unquestionable facts, but facts misinterpreted, or entirely detached from their legitimate relationship with other facts of equal prominence, and which exist in intimate connection with those adduced as constituting the true indices of the nature of the disease, and modifying essentially their pathological import and tendency.

Inflammation of the peritoneum, of the uterus, of the uterine veins, of the ovaries, or of several or all of these parts, being detected in almost every case of puerperal fever, it has been concluded, therefore, with great positiveness, that the disease was nothing more nor less than simply a local inflammation of the peritoneum, the uterus, or its appendages—a peritonitis, metritis, phlebitis, or ovaritis; that the local lesions are the primary effects of the cause that gives rise to puerperal fever, and that all the phenomena which characterize it are the direct result of the local lesions; no inquiry being instituted to ascertain whether, 1st, the lesions discovered in the abdominal serous membrane, and in certain or all of the pelvic viscera of the female, are the only ones that ordinarily occur in cases of puerperal fever. 2d. Whether the indications of local disease that are usually met with are in truth the primary results of the action upon the organism of the producing cause of the disease, whatever this may be; or, 3d. Whether they are not, rather, secondary results, depending on a prior diseased condition of the blood.

"The more," as has been correctly remarked by W. Tyler Smith, "puerperal fever is investigated, and tracked, as it were, to its elements or origin, the less satisfactory does any partial or local explanation of its nature become. In the progress of such examination, it appears more and more evident that there is a puerperal poison to which the lying-in woman is liable, and which produces (by its morbific action on the blood) all the varied phenomena of puerperal fever met with in different epidemics, localities, seasons, and constitutions. In one time or person, peritonitis is produced; in another, metritis; in another, phlebitis; in another, mammary or other abscesses; in another, low fever; in another, intestinal irritation; in another, dissolution of the blood, without a trace of local inflammatory disorder; and so on throughout the list of local or special disorders which have been described by authors in puerperal fever. It may be questioned, even if phlebitis ever occurs without a poisoned condition of the blood, produced either as the result of contagion, epidemic influence, or the absorption of putrid matter from the uterus."

Scarcely any heed has been given to draw a correct and accurate diagnosis between puerperal fever, properly so called, and cases of open, acute, uncomplicated peritonitis or metritis occurring during gestation or in the puerperal state. That the local phlegmasiæ just referred to do occasionally occur in the pregnant, but more frequently in the newly delivered, female is most certain; it is likewise certain that they have been, under such circumstances, almost invariably confounded with puerperal fever, adding to the confusion with which the pathology of the latter has been environed, and the uncertainty that has marked everything relative to its treatment. And yet the attentive observer will very readily discover an essential difference between the general pathological character of the simple phlegmasiæ of the abdominal and pelvic viscera as they present themselves during pregnancy and after parturition, as well as between their respective pathognomonic criteria; as much so, at least, as there is between the bronchial, pneumonic, and intestinal inflammations so common in the typhoid form of fever, and the simple acute form of bronchitis, pneumonia, or enteritis, occurring as a primary uncomplicated disease.

Another cause of the obscurity and contradiction which mark the commonly received opinions in respect to the pathology of puerperal fever is the assumption that it is an affection *sui generis*, nothing corresponding to it being ever met with in non-puerperal females or in the male subject. Had the so-called child-bed fever been carefully compared with certain febrile diseases occurring alike in individuals of both sexes, of nearly all ages, and under almost every circumstance and condition in which they may be placed, more correct views in relation to its nature would long ere this have been reached, and a more rational and successful plan of treatment and of prophylaxis discovered and confirmed.

That puerperal fever is not simply a peritonitis, metritis, or metro-phlebitis, is proved by the fact that the lesions met with after death are not only those of peritoneal, uterine, or venous inflammation, but, most generally, of all these combined, in connection, usually, with indications of a diseased condition, to a greater or less extent, of many of the other organs and tissues of the body, and invariably of the blood. The morbid anatomy of the disease thus very clearly indicates, that so far from the symptoms which characterize it being the result of a local inflammatory affection of the womb itself, or of its appendages or peritoneal coat, the local lesions that are present in any case are but part of a disease which, like continued fever, involves the entire organism, and which is the result of a contamination of the blood, as Dr. Ferguson has long ago clearly established; the contamination originating, it may be, in some cases, from causes existing within the patient's own body, but most generally from a contagion, infection, or poison coming from without.

Another fact in respect to puerperal fever has been most conclusively established, and that is its intimate relationship to constitutional erysipelas—erysipelatous fever. It has been shown by the histories furnished us of the epidemics of erysipelas which have prevailed in different parts of Europe and of this country, by physicians who had the best opportunities of studying them, that during such epidemics not only are a large proportion of recently delivered females liable to an attack of puerperal fever, but that unmarried and non-pregnant females are also liable to a disease having all the characteristic features of the fever reputed to be peculiar to the puerperal state, and exhibiting, in fatal cases, nearly all the lesions detected in the latter affection. Nay, further, that during these epidemics of erysipelas, males, also, are liable to the same inflammatory conditions of the serous and mucous tissues and of the veins, and to the same morbid state of the blood, that attend upon genuine puerperal fever. While, on the other hand, we have on record a number of well authenticated cases, which would seem to prove very conclusively that the contagion, infection, or poison, be it what it may, of puerperal fever is capable of producing erysipelas in both sexes. Thus, as Krämer has well remarked, we have ample evidence of the fact that so far as concerns their pathological constitutions and etiological relationship, puerperal fever and erysipelatous fever are identical; they differ only in certain non-essential phenomena.

The important bearing of the foregoing facts are beginning to attract the attention of the medical profession everywhere; and, while a few teachers, of unquestionable authority, still persist in viewing puerperal fever as simply an acute peritonitis or endo-metritis, or a metro-phlebitis with pyæmia, the major portion of our best educated practitioners are beginning to recognize the true pathological character of the disease, and, as a consequence, we find that its treatment has become more rational—or, at least, less exclusive—and, as we have reason to believe, more successful.

A very able and animated discussion on the subject of the disease in question—its etiology, pathology, prophylaxis, and treatment—took place in the early part of the past year, at the New York Academy of Medicine, and was continued at several of its sessions. The publications whose titles are prefixed to the present article are particularly interesting as setting forth the views advocated by two of the leading speakers on these occasions.

The first of them, by Dr. Joseph M. Smith, presents a very excellent and somewhat elaborate examination into the producing causes of puerperal fever. It will richly repay an attentive perusal. The views advanced in it are, in the main, sound, while the evidence adduced in their support is pertinent, and, as we believe, conclusive. Similar views, based upon the same class of facts, have for many years been advocated by us. Although the essay of Dr. Smith presents, confessedly, a very able outline of the true causes and mode of propagation of puerperal fever, it has by no means exhausted the subject. To the array of facts given by the author could be added, with very little research, a host of others, equally, if not more, striking and conclusive.

That our readers may know what are the views of Dr. Smith in reference to the nature of puerperal fever, we copy the following initiatory sentences of the pamphlet before us:—

"In glancing over the literature of puerperal fever, it is seen that physicians have been divided in their views concerning the pathology of that disease; some holding the opinion that it is an idiopathic fever, *sui generis;* others regarding it as essentially a local inflammation, taking the form of peritonitis, metritis, metro-peritonitis, or uterine phlebitis. Of late, the former of these opinions, with the exception of so much of it as imputes to the disease a specific attribute, has received the support of numerous able contributors to obstetric pathology. In fact, so generally is this view of the disease entertained at present, that Professor Simpson remarks that the evidence on which it rests 'has induced, of late, most of our best pathologists to reject the idea that puerperal fever is an idiopathic fever, *sui generis*, or a disease originating in, or identical with, peritonitis, or any other local inflammation.' But, while it is generally admitted that puerperal fever is not a disease, *sui generis*, it is nevertheless regarded as an *idiopathic* fever, assuming a peculiar malignant form, being one of a group of febrile affections which originate, for the most part, from similar local conditions, and which have for their primary and essential pathological element a poisoned state of the blood. The forms of disease associated with puerperal fever, and which mainly constitute the group of disorders referred to, are typhus, and its modification typhoid fever, erysipelas, and hospital gangrene. That these are congeric affections, and due to a common toxæmia, seems evident from the fact that they occur in situations in which a subtle poison, the *ochletic* miasm of Dr. Gregory, is generated and diffused in the air, and which, finding its way into and contaminating the blood, produces constitutional and local phenomena, varying in form and character, according to certain morbid predispositions of the system existing at the time of its reception into the circulating fluid."

The opinions of the author as to the etiology of the disease are thus summed up, in the conclusion of the essay:—

"In reviewing the facts which have been stated, it appears that puerperal fever sometimes arises from the noxious air generated from the foul discharges of puerperal women in crowded and ill-ventilated lying-in hospitals; sometimes from the absorption of putrescent matters lodged in the uterus and vagina after parturition; sometimes from the exhalations of patients labouring under typhus fever, erysipelas, and gangrenous diseases; and sometimes from the emanations from the human body dissected after death.

"It further appears, that the miasms of typhus, erysipelas, and puerperal fever are severally capable of producing any one, or all of these diseases; and that they may attach themselves to the persons or clothing of midwives and physicians, and thus be transported from their sources to the chambers of lying-in women. It is also observable, that the more ordinary form of disease, induced by the febrile effluvia in question, is typhus and its modification, typhoid fever, whilst puerperal fever and hospital erysipelas are but varieties of that disease, taking their forms from the peculiar predisposing conditions of the system, and certain epidemic influences.

"Finally, in contemplating the results of our inquiries, there are two things which cannot fail to be specially suggested and to make durable impressions on the mind. The first is, the importance of preserving in absolute purity the persons, clothing, and bedding of the inmates, and also the floors, furniture, and atmosphere of lying-in hospitals; and in case puerperal fever manifests itself, of adopting the most prompt and efficient means of extinguishing it—such as ablution, ventilation, fumigation, and, if necessary, dispersion of the patients. The second is, the imperative duty of physicians ever to bear in mind the danger of their becoming agents of disseminating the disease in epidemic puerperal fever seasons, and to observe every precaution against such accidents. If, indeed, there be any moral obligation resting on a medical man to his patients, paramount to every other, it is that of refraining from attending a female in labour, if there be the slightest chance of his conveying to her the germ of a mortal disease."

The remarks of Dr. Barker, as reported in the second pamphlet, bear more exclusively upon the pathology and treatment of puerperal fever. In reference to the first of these points, he observes that the disease is one which cannot be investigated by the study of a few sporadic cases, or of a single epidemic, or of different epidemics in the same locality.

"Neither is it a disease to be studied in the dead-house, for, valuable as are the researches which have been made into the minute anatomy of this affection, important as it is, for the complete elucidation of the subject, that everything should be known as to the autopsic lesions which are to be found; yet their variety in different epidemics, the absence of everything like constancy or uniformity in these autopsic lesions, the frequent want of everything like correspondence between the severity of the symptoms during life, and the amount of the morbid appearances found after death, prove, as I think, that these lesions should be regarded as results of the disease, but not *as the disease.* And it seems to me that there is some danger of our giving undue prominence to these autopsic lesions. We might as well seek to find out the cause of the fire, in a minute chemical and microscopical examination of the ashes of a conflagration, as rely upon the appearances found after death, to determine the character of a disease which results from the absorption of a morbid poison. But, is this such a disease? That is the grand question, and it can be answered correctly, not by studying the disease from one stand-point alone, but by a comprehensive examination of all that has been found out as to its phenomena and laws, in different epidemics and varied localities, as recorded by different observers."

"In this day of progressive medicine, in our anxiety to bring it up to the perfection of a physical science, it is possible that in our search after what is new and original, we may overlook what is old and proven, and thus that erroneous deductions may be drawn from the limited experience and observation of a few, which would have been corrected, had advantage been taken of the enlarged experience of the many. We have greatly the advantage of our predecessors in studying this disease. With all the acumen and careful observation of Gordon, and Armstrong, and Collins, and Gooch, and Ferguson, they had but a limited knowledge of its pathology and therapeutics compared with what we have, who can bring together the aggregate results of all their labours, without assuming to place ourselves on the same level with them."

This is perfectly true; it is in consequence of the one-sided conclusions that have been drawn in relation to the nature and causes of puerperal fever, from imperfect, partial, and insufficient observations; from facts perfectly accurate in themselves, but the true import of which can be arrived at only by studying them in their relationship to other coexistent facts, the very presence of which may have been unsuspected; from facts badly interpreted, in consequence of the confounding of effects with causes—of secondary and remote, with primary and immediate phenomena; from taking a few isolated cases or a single epidemic visitation of the disease as indicative of its true type, that all the errors that exist in relation to the pathology and treatment of puerperal fever have originated.

The following are the reasons which Dr. Barker adduces in proof of the disease being of zymotic origin, and having an essentiality altogether distinct from inflammation of any tissue or structure of the body, even in the puerperal female.

"1. *Puerperal fever has no anatomical character.* That there are a great variety of structural lesions found, all will admit. The four principal lesions are, as Dr. Clark has said, those of the peritoneum, of the veins of the body of the uterus, of the lymphatics, of the inner surface of the uterus. And then we have lesions of the pleura, of the lungs, and pus in the liver, in the muscles, in the joints, and pus in the blood. But where we have a group of symptoms so resembling each other that they are almost identical, we do not have constant or uniform structural lesion. They are inconstant in their seat and their amount. In the same epidemic we have the greatest possible variety in their seat and their amount. Lesions of the peritoneum may be present or absent, so of the uterus, so of the lymphatics, and so of the veins. In those cases which Osiander, Gooch, Locock, and Simpson suppose to be cases of puerperal fever without lesion, conceding the correctness of Prof. Clark's view, that with a proper examination pus might have been found in the veins of the uterus—that they really were cases of pyæmia, what does this prove? * * * Admit the fact, will any one claim that all cases of puerperal fever are cases of pyæmia, and that inflammation of the inner surface of the uterus, or of its veins, is an essential anatomical characteristic of puerperal fever?

"2. *These lesions are often not sufficient to influence the progress of the disease, or to explain the cause of death.* The most malignant form of the disease, that in which a fatal result occurs the most speedily, offers the fewest and the least striking structural lesions. The longer the disease continues, the more prominent and the more manifest are the organic lesions. Does not this prove that the lesions are consecutive or secondary—that there is a primitive source, an original cause of vital depression, which sometimes destroys life so rapidly that there is no time for the development of the secondary morbid alteration. The symptoms are not, then, the result of these lesions, but the result of some specific agent—some morbid poison, which subsequently develops the autopsic lesions. Sometimes the morbid poison so overwhelms the system, that the patient dies in a few hours, without any reactional symptom. It is not in these cases we have the most marked structural lesions.

"3. *We may have inflammation even to an intense degree, of any of the organs in a puerperal woman, in which the principal lesions of puerperal fever are found, and yet the disease will lack some of the essential characteristics of puerperal fever.* I mean to say, we *may* have peritonitis, or phlebitis, or metritis, in the lying-in woman, and yet the disease will be quite distinct in its mode of attack, in its symptoms, in its morbid anatomy, and in its treatment from puerperal fever."

What Dr. B. asserts *may occur*, we assert *does occur*. Simple acute inflammation of the peritoneum, or of the uterus or its veins, is not uncommon in the puerperal state; and has, we know, been confounded with true puerperal fever.

4. The next reason adduced by Dr. B. is the fact that *the lesions themselves, detected in puerperal fever, differ materially from those having their origin in simple inflammation.* This is very clearly shown in the contrast which Dr. Murphy has drawn between the two, and which is quoted at length by Dr. Barker.

5. Another argument presented in proof of the doctrine that puerperal fever is a zymotic disease and not a local phlegmasia, is, that *simple inflammation is not communicable from one patient to another, through the medium of a third party,* as is the case with the former, of which Dr. B. adduces the evidence.

6. A further argument, of similar bearing, is the fact that *the prophylaxis of puerperal fever will not answer as the prophylaxis of a simple local inflammatory disease.* In proof of this Dr. B. refers to what occurred in the General Hospital of Vienna, where the mortality from puerperal fever was reduced from *one* in every *ten* females delivered, as it stood between the years 1840 to 1846, to *one* in *seventy-four*—the ratio in 1848—by preventing the students from touching any diseased subject at the *post-mortem* examinations, and causing them to wash thoroughly their hands in a solution of chlorine before and after every vaginal examination, measures that would be perfectly futile as preventives of any simple inflammatory affection.

"It may be objected," says Dr. B., "that the views which have been advanced as to the pathology of puerperal fever, entirely ignore the existence of an epidemic influence, and that the epidemic influence may give a specific character to the local phlegmasia. From Sydenham we have learned the phrase 'type of the season,' and another phrase has come into use, meaning nearly the same thing, viz: 'Epidemic constitution.' Now, what is meant by these terms? Clearly they must refer to certain atmospheric or telluric influences, which modify the susceptibility of the system to disease, or which increase the virulence of the poison which develops disease. That this influence really exists, acting in both ways, I think there can be no doubt. It sometimes produces its influence wholly on the system, diminishing the vital resistance to disease, and rendering inflammatory action asthenic in its type, or the opposite result may be produced. So, also, it may increase the virulence of the poison which gives rise to the zymotic diseases. Puerperal fever is most notably susceptible to an epidemic influence."

In respect to the treatment of puerperal fever, Dr. B. remarks that it has not been his lot to witness any epidemic of the disease in which bloodletting was admissible, yet he believes that such may occur. In sporadic cases, he considers it as undoubtedly much more frequently indicated.

It seems to him that the principle which should govern our practice in this disease, should be the same as would govern our practice in any other disease. Venesection should never be resorted to simply because the case is one of puerperal fever, but because the symptoms indicate that depletion is necessary. He holds that it is equally absurd to insist upon it as the cardinal remedy, as to denounce it as never applicable in the management of this disease.

"The same general principles should govern us in resorting to purgatives, emetics, diuretics, &c. * * * They are neither to be excluded wholly, nor to be relied upon entirely, in the treatment. They may be indicated in certain cases, but they are only to be resorted to when there are special indications for their use."

An important indication in the treatment of the disease is to control vascular excitement and nervous irritation. As an arterial sedative well adapted to reduce the excitement of the vascular system, inasmuch as it does not depress the vital powers, Dr. B. recommends the veratrum viride. To allay nervous irritation he is in favour of large and repeated doses of opium. "It is astonishing to see," he remarks, "to what extent patients will tolerate opium, where the peritoneal lesion predominates. When opium is acting beneficially in such cases, there will be a reduction of the frequency of respiration and also of the frequency of the pulse. If the opium is pushed to the point of incipient narcotism, and the respiration grows slower and slower, without a corresponding decrease in the pulse, the remedy is not acting beneficially, and should be at once abandoned."

To combat the local secondary lesions which may be developed, Dr. B. suggests local depletion, counter-irritation, fomentations to the abdomen, turpentine endermically, opium to subdue pain, and chlorinated injections.

In those cases in which the system seems to be overwhelmed, it is probable that life may be preserved by the heroic use of stimulants and appropriate nutriment. Dr. B. believes that many are left to die from the neglect of these resources. It seems to him that after a patient with puerperal fever has lived for forty-eight hours, there is constant encouragement for effort, and that the danger is, in a certain sense, diminished in proportion to the duration of the disease.
D. F. C.

Art. XXV.—*Reports of American Institutions for the Insane.*

1. *Of the Eastern Lunatic Asylum of Kentucky, for* 1856–57.
2. *Of the Tennessee Hospital for the Insane, for* 1856–57.
3. *Of the State Lunatic Hospital of Pennsylvania, for* 1857.
4. *Of the Pennsylvania Hospital for the Insane, for* 1857.
5. *Of the Mount Hope Institution, for* 1857.
6. *Of the Butler Hospital, for* 1857.
7. *Of the McLean Asylum, for* 1857.
8. *Of the Massachusetts State Lunatic Hospital, at Worcester, for* 1857.
9. *Of the Maine Insane Hospital, for* 1857.

1. The termination of the fiscal year of the Eastern Lunatic Asylum of Kentucky having been changed, the last report instead of including the usual period of two years, is restricted to one year and nine months, ending with the close of September, 1857.

	Men.	Women.	Total.
Patients in the Asylum, Jan. 1, 1856	104	82	186
Admitted in 1 year and 9 months	108	66	174
Whole number	212	148	360
Discharged, including deaths	83	49	132
Remaining, September 30, 1857	129	99	228
Of those discharged, there were cured	47	18	65
Died	22	23	45
Whole number since the Asylum was opened	1,530	757	2,287
Discharged, recovered			840
Died			897

Causes of death the last year and nine months.—Maniacal exhaustion, 10; epilepsy, 9; consumption, 5; dysentery, 4; marasmus, 3; hemorrhagic exhaustion, 3; old age, 2; *paralysie générale*, 2; frost-bite, 2; apoplexy, 1; fever, 1; ossification of heart, 1; bed-sores, 1; chorea, 1.

"Diarrhœa," says Dr. Chipley, "has been the prevailing malady in this institution for many years. In April, 1856, it was observed to be more than ordinarily prevalent, and early in May it assumed the form of an epidemic."

It was discovered that a subterranean communication had been formed between the main sewer draining the kitchens, bath-rooms, water-closets, &c., and the spring which supplied the establishment with water. This connection became so direct that soapsuds would issue from the spring almost as pure as when emptied at the wash-house, in the short space of twenty minutes. Water was no longer taken from the spring, but brought from another source, nearly a mile distant. Within one week not a case of diarrhœa remained in the house, and we continue exempt from that troublesome malady to the present time (Oct. 1, 1856). Our note-book exhibits evidence of a very remarkable and sudden change in the character of complaints, cathartics taking the place of opiates and astringents. It being found impracticable to remedy the defect by which the spring was corrupted, an artesian well was made, whence the buildings are now supplied with water. At the close of September, 1857, Dr. Chipley writes as follows: "The general health of the institution has been good during the entire year. The beneficial influence of the new supply of water for the ordinary purposes of the asylum has been most marked throughout the season, and all our flattering anticipations have been fully realized. Diarrhœa, once the perpetual scourge of the inmates of this institution, has disappeared, and the various affections treated here have become more manageable in the absence of this complication."

Among the popular notions in regard to the insane, perhaps no one is more erroneous than that which relates to their power of self-control. "That the impulses of the insane," says the report, "are in a great degree subject to their will, will be obvious to any intelligent observer who may visit a lunatic asylum. How readily the inmates conform to the discipline of the institution! They may be deceived by their senses; believe that real which does not exist; suppose themselves masters of unlimited wealth and power; and yet under the influence of proper motives, they will resist their impulses and exhibit unmistakable evidence that their actions are still subject to the will."

There are certain absolutely imperative and uncontrollable impulses to which a very small number of the insane are subject. Such, for example, are the sudden mental determinations to homicide and to suicide. Sometimes a similar psychic force is expended in a different direction. Thus a patient, ordinarily quiet and harmless, will suddenly, and with almost the velocity of lightning, start from his chair and thrust his fist through a number of window-panes; or, seizing the chair, will dash it against the window or break it to splinters upon the floor. This done, often without speaking a word, he immediately resumes his former quietude of demeanor, and perhaps seats himself in the next chair as calmly as if his mental and physical equanimity had not been disturbed. Now, aside from these impulses, and those which direct the actions in delirium, by which term it is intended to imply absolute unconsciousness of surrounding objects and their relations, there are but very few psycho-physical tendencies or forces which lie beyond the domain of the restrictive volition of the patient. One of the best attendants ever in our employ, had charge during a long period of the department for the most violent patients in the asylum. He had previously been employed in the like department of another similar institution. He one day remarked to me that he "never yet saw an insane man who could not control himself, if he had a mind to." The only requisite for this end is a sufficient inducement or motive. Many of the insane, like wayward children, will behave well if they be but well paid for so doing. The maniac whose vociferations make his ward a bedlam, will barter silence for a lunch of gingerbread. The pretentious "emperor of the world" will waive his pretensions so far as to keep them to himself, and kindly and quietly assist in the domestic labor of the hospital, for an extra morsel of pie. The late Dr. Woodward, when at the Massachusetts State Lunatic Hospital, had among his patients an elderly woman whose erratic and incoherent thoughts appeared to be as intimately connected with her tongue as is the key of a piano to the hammer which strikes the string. If a thought moved, the tongue followed it as necessarily as light comes with the rising sun. Her brain leaked like a colander. One Sabbath she asked permission to attend service in the chapel. After conversing with her a while, and extorting from her a promise that she would preserve unbroken silence, the doctor granted her request. But she broke her promise and disturbed the congregation with her loquacity. After the service the doctor expostulated with her for her conduct. "Doctor," said she, "I'm sorry for it, but I *couldn't* help it. If you'll only let me go again, and *give me a cracker to eat,* I think I can keep still." Her wishes were again gratified, and with the aid of the cracker she succeeded in preserving silence. It was not, however, without great exertion, and with very enthusiastic mastication at the moments when the greatest impulse to speak was upon her. Thereafter she attended service regularly, always supplied from the commissarial department with the important and potent biscuit. Not a little of the turbulence, violence, threatening, and imperative domineering conduct of the insane has its origin in the innate love of power. The maniac reiterates his shouts because he is permitted so to do; he disarranges all his surroundings because the persons who ought to prevent it have permitted their wills to fall into subjection to his will; he multiplies his commands, however irrational, because he is obeyed. Submission refused, the commands cease. He threatens, and is feared—he repeats his threats for the mere self-gratification of observing the effects of his power. Face him calmly and fearlessly, and he is often the greatest of cowards. A patient was once brought to us by six men, all of whom were very evidently afraid of him, and granted such of his demands as could not be evaded by deception. Taken into the office, his first act was to seize a chair, and with vociferated commands to the persons around him, dash it in pieces upon the floor. We stepped up to him, and, looking steadfastly in his face, as we pointed to another chair, said: "We do not permit such conduct here. Sit down in that chair." No child ever obeyed more quickly or more quietly.

2. Dr. Cheatham, in the third biennial report of the Tennessee Hospital for the Insane, informs us that the wings of the hospital edifice, which were in process of construction at the time of the last preceding report, have been completed. "The original design of the architect has thus been carried out, and the result is, that a building has been perfected for the treatment of the insane of the State, which, for capacity and all the appointments for health and convenience, as well as architectural elegance, has no superior for similar purposes in the United States. * * * The arrangement for heating and ventilating is as nearly perfect as that of any similar institution." The ventilation is to be forced by a centrifugal fan seventeen feet in diameter, and six feet in width. This is not yet completed.

	Men.	Women.	Total.
Patients in the Hospital Oct. 1, 1855 .	63	42	105
Admitted in the course of two years . .	78	44	122
Whole number	141	86	227
Discharged, including deaths . . .	45	24	69
Remaining, October 1, 1857 . . .	96	62	158
Of those discharged, there were cured .			28
Died			19

Deaths from epilepsy, 4; consumption, 5; marasmus, 6; exhaustion following protracted mania, 2; chronic diarrhœa, 2.

"The general health of the entire establishment for the last two years has been excellent. No epidemic, of any character, has prevailed. While other localities have been visited with dysentery, typhoid fever, and other diseases, in a malignant form, the patients here, and those having the care of them, have escaped. Of the nineteen deaths here reported, not one was the result of an acute disease."

	Men.	Women.	Total.
Whole number of patients from March 1, 1852, including 60 (39 males and 21 females) transferred from the old asylum	251	139	390
Discharged, recovered			109
Died			45

"The statistics of insanity," remarks Dr. Cheatham, "abundantly prove that when judicious treatment is early resorted to (in less than three months after the attack), more than eighty per cent. of the patients recover."

This extract is not quoted because it presents any new idea or notion. The substance of it has been written by almost every physician who has made a report of any one of our hospitals for the insane, in the course of the last twenty years. Properly interpreted, it may be true, but it is not our impression that it is correct if applied to all those patients of whom *it is alleged by their friends* that their mental disorder is of less duration than three months. Our object, however, in introducing the subject, is to remark that one undoubted effect of the frequent assertions of the curability of insanity in its early stages, is the production of a popular notion that the disease, as it exists among the people—chronic and recent cases inclusive—is far more curable than it really is. The assertion is seized, and without coupling it with any exposition of the great incurability of chronic cases, is made general in its application. Even among physicians there has been a false impression originating from the method by which the reports from the public institutions have been made. Not this alone, but upon the same foundation have been based some of the most severe censures to which the physicians to hospitals for the insane have been subjected by their medical brethren in general practice. The late Dr. Samuel B. Woodward, one of the greatest ornaments of the psycho-medical specialty in the United States, was the first in this country to make elaborate reports, with long tabular analyses and classifications of cases. Among his statistics he generally placed the *percentage* of recent cases discharged cured upon the whole number of recent cases discharged. This *percentage* was, as it ought to be, very large. But the isolated and partial statement was the cause of serious detriment to the reputation of the doctor. We heard physicians of eminence in remote parts of the Union speak of him as a charlatan, because, as they said, he pretended to cure nine-tenths of the cases of insanity subjected to his treatment. Of course, he never pretended to anything of the kind. Had those physicians investigated the subject, by simply reading all the parts of his reports which treated upon it, they would have learned that he made no pretension of effecting a restoration in more than from forty to fifty per cent. of his patients.

Ten years ago, in a debate in the Association of Medical Superintendents of American Institutions for the Insane, we maintained that of every one hundred persons admitted as patients into the asylums in the United States, not more than twenty-five are *permanently* cured. Since that time, the subjoined statement by Dr. Thurnam, based upon an analysis of 244 patients treated at the Friends' Retreat, near York, England, has come to the justification of our opinion.

"In round numbers, of ten persons attacked by insanity, *five recover*, and *five die*, sooner or later, *during the attack;* of the five who recover, not more than *two* remain well during the rest of their lives; the other *three* sustain subsequent attacks, during which at least *two* of them die."

According to this estimate the *permanent cures* of first attack are but *twenty* per cent., the deaths *fifty* per cent.; and of all persons attacked by insanity, *seventy* per cent. die insane. This we apprehend approximates very nearly the truth if applied to the insane in the United States. Yet we agree with Dr. Thurnam that, "although the picture is thus an unfavourable one, it is very far from justifying the popular prejudice that insanity is virtually an incurable disease; and the view which it presents is much modified by the long intervals which often occur between the attacks, during which intervals of mental health (in many cases from ten to twenty years' duration) an individual has lived in all the enjoyments of social life."

By a recent purchase of land, the farm of the Tennessee Hospital has been increased to four hundred and fifty-five acres. The "new purchase contains an abundance of water, which was deficient in the old tract." "The people of Tennessee being, and destined to continue to be an agricultural people, it follows that a majority of the male patients will continue to be from that class. Men are naturally fondest of those employments to which they have been trained in early life. Now, *employment* is among the chief modern means of cure of insanity; and it is alone such employment as patients are fond of, and will take kindly to of themselves, that can be made available as a means of relief. It is, therefore, of every importance to have sufficient space to furnish ample employment to all who require it."

3. The leading items in the *Medical Record* for 1857, of the State Lunatic Hospital of Pennsylvania, are as follows:—

	Men.	Women.	Total.
Patients at the commencement of the year	130[1]	103[1]	233[1]
Admitted in course of the year	76	67	143
Whole number	206	170	376
Discharged, including deaths	76	50	126
Remaining at the close of the year . .	130	120	250
Of those discharged, there were cured .			25
Died			25

Causes of death.—Exhaustion of chronic mania, 13: exhaustion of acute mania, 4; epilepsy, 4; suicide, 1; inflammation of the brain, 1; homicide, 1; inflammation of the lungs, 1.

"While inculcating, in all cases," remarks Dr. Curwen, "the necessity and propriety of early treatment in all classes of mental disorders, there is one form characterized by the highest mental excitement, and coming on rather suddenly, which is always aggravated, and the death of the patient often hastened, by the travelling necessary to reach the hospital. A fortnight's delay in such cases would often show the character of the disorder more decidedly, and save the friends much distress and trouble."

"During the long evenings in fall and winter, the system of lectures on subjects of interest, with illustrative experiments, and also exhibitions of the magic lantern, have been regularly kept up, and have contributed much to the interest, amusement and advantage of the whole household." Dr. Curwen suggests "the establishment of a gymnasium and bowling alleys, for both sexes," thus supplying means by which, during the cold season, listless and moping melancholy may be dissipated, dormant energies aroused, and irritability and excitability, which, without some such means, is "expended upon fellow patients or on the furniture of the hospital," worked off.

The subjoined extracts are made from that portion of the report which is devoted to "the condition of the insane scattered throughout the different sections of the State" of Pennsylvania. They speak for themselves in terms which require no comment from us.

"The practice is too common, when friends are fully able to make adequate provision for their support in some hospital, to fit up in, or more generally to build a small room near the house, so arranged as to exclude all sight and sound of surrounding nature and humanity, shut up the poor insane man in that, with nothing but four rough, bare walls and a roof to look at, the coarsest and meanest provision scantily furnished, just sufficient clothing to cover him, and no word of sympathy or kindness to cheer and relieve the terrible solitude, too often not even broken when the meals are pushed rudely through a small opening for the purpose, or the den (for it deserves no better name) is cleaned out weekly or monthly, as time can be spared by some members of the family from some other work. If such a place is barely endurable in summer, what must it be in winter, when no adequate provision is made to give that warmth which will keep the poor creature from suffering with the extreme cold. And often, as if all this were not enough, the poor man is chained to one corner of the room, with just such length as will give him space to turn round and relieve the misery of his condition by a change of place. * * * * * This mode of treatment is bad enough when men only are subjects of it, but when females, from the young girl to the aged and feeble mother who has watched over and carefully and anxiously nurtured those who thus reward the infirmities of her declining years, every feeling of our better nature is outraged, and we cannot find words to express the indignation which rises within us.

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[1] Not stated in the report, but derived from the other figures.

"The amount of actual suffering on the part of the insane, and of cruelty on the part of relatives, which by means similar to the above, are concealed from the public, is incalculable, and is not confined to any particular locality, but is scattered in every direction over the commonwealth.

"In *many counties* of the State, the part of the building (almshouse) allotted to the insane is fully as good as they could prepare, and the only requirement needed would be the employment of others than paupers to take charge of and attend to the wants of the insane. But in *much the larger number* the accommodations for the insane are miserable, and mostly confined to some few rooms in the basement, cold, damp, and dark, or purposely made dark, where the more violent of both sexes, all grades of insanity and all colours, are mixed together, the more harmless and demented being allowed to remain with the ordinary paupers. There is too little care exercised in the construction and arrangements of the building to promote a due separation of the sexes; and this failure often renders abortive the best efforts made by those in charge to prevent any improper communication. But the great fault underlying the whole system, consists in the parsimonious manner in which the cold charities of the public authorities are dealt out to this unfortunate class; the effort seeming to be to demonstrate on how small an allowance soul and body can be kept together, and how slight a portion of raiment can be made to answer the demands of nature. The apartments are not sufficiently warmed in cold weather, so that they suffer severely from frozen extremities, and other diseases induced by severe cold, even if their life is not suddenly terminated."

4. The general results of the medical history of the Pennsylvania Hospital for the Insane, for the year 1857, are as follows:—

	Men.	Women.	Total.
Patients at the beginning of the year	110	114	224
Admitted in course of the year	67	73	140
Whole number	177	187	364
Discharged, including deaths	60	74	134
Remaining at the end of the year	117	113	230
Of those discharged, there were cured			74
Died	14	3	17

Deaths from acute mania, 3; softening of the brain, 4; tubercular consumption, 1; congestion of the brain, 1; dysentery, 1; chronic diarrhœa, 1; suicide, 1; sloughing ulcerations, 1; "that gradual exhaustion induced by the combined action of long continued mental excitement, want of sleep, and a refusal of food," 4.

Dr. Kirkbride remarks that patients are frequently prematurely removed "because the friends really feel themselves unable to continue to defray the necessary expenses of treatment, even when a few months' longer residence in a hospital might have resulted in a complete restoration," and adds: "Great good has been done for this class in former years by the liberality of individuals who have on several occasions enabled us to make provision for some of these." To generous acts of this description at other hospitals for the insane, we take pleasure in here recording our testimony. Among the managers of an institution the line of whose policy, in some respects, it has been our duty freely to censure in our previous "notices," there have been, and still are, individuals of whom it may truly be said, that the left hand knows not of the manifold charities which flow with holy influence from the right. When the time shall come for the gathering together of the deeds of pure but quiet and unostentatious benevolence, deeds which were not intended to be, and are not "graven upon marble or published upon the house-tops," there shall come up from the unwritten annals of our institutions for the insane, a host of witnesses to the Christian spirit of their managers; acts of pecuniary liberality toward the poor and the lowly, springing from the sympathy of a common nature and seeking their objects merely by virtue of that brotherhood which is the consequence of a mutual paternity in the universal Father; acts by which the curtain was withdrawn from the shadowed soul, and joy and gladness borne to many a fireside and through all the channels of the sphere of social life.

The general scheme of moral regimen at the Pennsylvania Hospital which has heretofore been very fully presented to our readers, is still continued. The report before us bears testimony worthy of remark, to the pre-eminent value, as a restorative measure, of useful, manual, out-of-door employment. "It has been a constant observation here, that whenever a certain class of patients begin to go to the garden regularly to assist in its cultivation, their entire restoration may be predicted with much certainty." In connection with this statement by Dr. Kirkbride, we may express the opinion, derived from no inconsiderable observation, that of the insane, other things being equal, a larger proportion of those who belong to the labouring classes of society will recover, than of those who have been unaccustomed to labour. Not unfrequently have we looked with unfeigned but unavailing regret upon patients of the latter class, with the strong conviction that their restoration to mental health might be effected by proper manual employment, judiciously managed, but knowing that their wealth, their position, or their pride, each or all conspired in causing them to repel the very thought of resorting to it. Wealth may surround the insane man with all the comforts and the luxuries of life, but it not unfrequently debars him from the only hope of recovery.

In juxtaposition with this report, and *apropos* to the subject of moral treatment, we have to mention a handsomely printed *brochure* of twenty-two pages, entitled "Our Lecture Room, a lecture introductory to the thirteenth annual course of lectures and evening entertainments at the Pennsylvania Hospital for the Insane," by Edward A. Smith, M. D., assistant physician. Like many other "introductories," this lecture was "published by request of the class." This is an age of innovation, and the insane are following closely at the heels of the sane. The world is beginning to learn that although mental alienation takes from man the full exercise of his noblest gift from Heaven, it nevertheless in a very large majority of cases leaves intact, or but partially impaired, some of his mental faculties, and the ability to derive enjoyment from their use. It is awakening to the conviction that they who were once given up to "chains and a dungeon," can still appreciate in a greater or less degree, the lecture and the lecture room.

Dr. Smith's discourse is appropriate to the subject, the occasion, and "the class." His principal object is to give a history of that branch of moral treatment in the hospital which has gradually matured into an established "institution" of lectures. Such facts, here embodied, as are worthy of historical record in a medical journal, have mostly been inserted in former notices of reports from this institution.

Returning to the report, we extract the subjoined general statistics:—

	Men.	Women.	Total.
Whole number of patients admitted since 1841	1608	1450	3058
Discharged cured	777	722	1499
Died	191	140	331
Patients between 20 and 30 years of age at first attack	591	539	1130
Patients between 30 and 40 years of age at first attack	413	332	745

The entire building for the new hospital "is now under roof," and otherwise in an advanced stage of progress.

5. In the course of the year 1857, "no form of acute disease," writes Dr. Stokes, Physician to the Mt. Hope Institution, "has prevailed in our wards, and the patients generally have enjoyed physical health to a remarkable degree."

	Men.	Women.	Total.
Insane patients at the beginning of the year	47	76	123
Admitted in course of the year . . .	36	44	80
Whole number in course of the year . .	83	120	203
Discharged, including deaths . . .	25	41	66
Remaining at the end of the year . .	58	79	137
Of those discharged, there were cured . .	13	20	33
Died	6	7	13
Cases of mania a potu discharged . .	16	1	17
Of these, there were cured	14	0	14
Died	2	1	3

From the remarks of Dr. Stokes upon the controlling influence, or disciplinary *regime* of an institution for the insane, we quote the subjoined:—

"This discipline * * * should be mild and temperate, cheerful but constant. It should be a system in which firmness is blended and tempered with kindness and gentleness. * * * Peculiar pains should be taken to save his (the patient's) tender sensibilities, as far as practicable, and to relieve even from view the knowledge of his being subjected to restraint. And it is wonderful how readily those who previously had bid defiance to every attempt to control their waywardness yield to the restraining influences here surrounding them. * * * * The moral effect of such a system is peculiarly striking and marked upon many of the spoiled and depraved intellects, whose insanity is owing to over-indulgence in early life, and who here find, for the first time, a check imposed to the reckless gratification of their wayward impulses and propensities. * * * * We would not underrate the value and importance of judicious medical treatment in cases of insanity, * * * especially in acute cases, yet, in that large class comprising the chronic cases, we must admit that *moral influences* possess by far the greater efficacy. For such, moral treatment is the great sheet anchor."

Of patients the type of whose disease is melancholia, accompanied by refusal of food, it is remarked that "no class of subjects are to us the occasion of greater anxiety and concern than this. Sometimes gentle and patient expostulation and persuasion, or a little stratagem, will avail when food is refused, under the influence of some specific delusion. * * * But it is exceedingly wrong to wait, in these cases, until the pulse begins to flag, before we resort to the forcible administration of food. We should say three days is the longest period we should delay a resort to compulsory alimentation."

In melancholia "many a man has considered himself spiritually lost whilst under the mental depression resulting from long continued hepatic and gastric derangement; and instances frequently occur of persons imagining themselves to be condemned to everlasting punishment, believing they have committed the unpardonable sin, and of others supposing themselves to be the subjects of demoniacal possession, *owing to the existence of visceral disease, or a congested condition of some portion of the great nervous centres.*"

In the discussion of one of the most prolific causes of mental alienation, Dr. Stokes says: "We wish to direct attention to the fact that intemperance in the parent is shown by the records of our asylum to be an active cause of *insanity* in the offspring. We entertain the conviction that a careful investigation of the subject would furnish conclusive evidence that many of the sad wrecks of intellect owe their lamentable condition to intemperance in their parents."

The early removal of the insane to institutions specially devoted to the treatment of their malady has been urged by most recent writers upon the disease, and by perhaps every author of reports from lunatic hospitals in the course of the last twenty years. "No physician," says the report under review, "is justified in attempting the cure of insanity whilst the patient continues surrounded by the objects and circumstances of his past life. * * * * It is conceded by all that the separation of the lunatic from all his habitual associations, his friends, relations, servants, &c., is a most essential preliminary to treatment." Dr. Stokes has probably given to these asserted opinions a somewhat more general application than he intended. "There is no rule without exceptions," says the old aphorism; and to these, according to our views of the subject, the exceptions are multitudinous. We entertain the belief, unqualified by the slightest shadow of doubt, that a large majority of the cases of puerperal mania, as well as a very considerable proportion of those of acute insanity originating in other causative sources, may be cured at the homes of the patients, thus saving them and their friends from all those unpleasant feelings to which households ever have been subjected, and, write what we may, say what we may, paint the picture brightly and beautifully as we may, ever *will be* subjected, by the removal of one of their numbers to an institution for the insane. We would include among the cases which we think may be cured without removal all, or nearly all, of those *the period of incubation of which is very brief.* Thus to cure them, however, the two following conditions must be fulfilled: First, the medical treatment must be prescribed under the dictates of knowledge and good judgment; and secondly, *the medicine must be taken.* Our restricted limits prevent us from here enlarging upon this topic as we would like, and we must therefore rest content with asserting (what may be but a repetition of idea) that medical treatment, wisely directed and *thoroughly applied,* will rapidly cure large numbers of the acute cases of insanity which originate in causes nearly proximate in respect to time, and consequently brief in their term of influence. We are satisfied that Dr. Stokes would not, himself, apply his remarks so generally, unless he regarded the disease at a period some weeks subsequent to its first appearance.

6. The report by Dr. Ray, of the Butler Hospital for the Insane, is almost wholly devoted to a retrospect of the ten years during which that Institution has been in operation. The subjects discussed mostly relate to finances, and improvements of the buildings and the ground. We shall make such extracts as are adapted to the purposes of these notices.

	Men.	Women.	Total.
Patients in the hospital Dec. 31, 1856	69	73	142
Admitted in course of the year	21	16	37
Whole number	90	89	179
Discharged, including deaths	23	16	39
Remaining, Dec. 31, 1857	67	73	140
Of those discharged, there were cured			15
Died			10
Whole number of patients since the opening of the hospital			814
Discharged, recovered			260
Died			158

"Deeply impressed with the power of pictures to produce the same kind of effect (that of making agreeable impressions, and thus promoting restoration) in a still higher degree, we have used every opportunity to obtain them; and now, thanks to friends who needed only a hint, we number among our possessions thirty-three oil-paintings, one hundred and thirty-five copper-plate or steel engravings, framed and glazed (few of them measuring less than four hundred square inches), fifteen finely-colored lithographs, handsomely framed, and a considerable number of maps, panoramic views, &c. Some of them have been placed on the walls of nearly every hall, dining-room, and common dormitory; and there they have remained, the most of them several years, without sustaining a single intentional injury to glass, frame, or canvass.

"Our library has been increased from year to year, chiefly by donations, both in money and books, and now numbers about eight hundred volumes of standard works in history, biography, romance, poetry, travels, morals, and religion, besides some hundred more of no commercial value at all, but which serve a very useful purpose here.

"In those duties and services which constitute the direct management of the insane, we would fain hope that these ten years have witnessed some advance, though necessarily not so palpable as those material improvements already described. It is not easy to convey a very definite idea of what this advance consists in. We lay no claim to discoveries or inventions; we have failed to see the humanity or wisdom of dispensing entirely with seclusion or restraint; in short, we have found no royal road to the great end and object of our labours. We have sought improvement in a very different direction, by making the law of kindness and gentleness an all-pervading, all-controlling spirit; by multiplying the inducements to fidelity; by strengthening the habit of vigilance and forecast; by holding up the sacredness of the trust implied in the care of helpless and afflicted fellow-men; by developing a tone of feeling more effective than rules for preventing improprieties; by raising the standard of all those qualities which the service should display; and so ordering it, in short, as to make it productive of all the comfort and amelioration which may depend upon it. Such, I apprehend, is the direction in which all true progress leads; and the character of the result is to be determined not by amateur writers on insanity, but by those who have been much conversant with the disease, and are capable of profiting by their observations."

The report closes with a eulogium of the character of the late Moses Brown Ives, one of the trustees of the hospital, from its first organization. Of his one hundred and twenty prescribed official visits to the hospital, "he missed but nine, six of which, in succession, were in consequence of severe illness. Besides all this, he visited for some one else forty-five times. One of the last of his regular visits was made on foot, breaking a path the greater part of the way, immediately after the memorable fall of snow in January last, which blocked up all the approaches to the city. He did this not because he supposed that any important interest would suffer by the postponement of the visit, but upon one of the leading principles of his life: to allow no difficulty to turn him easily from the performance of any trust, great or small, which he had undertaken. * * * In every enterprise for promoting the public good, his sympathy and support could be reckoned on as surely as the course of nature. * * * His hand was ever ready to co-operate with the convictions of his understanding, and the impulses of his heart. * * * He was conservative enough to cling to all that was good in the past or present; yet he believed in healthy progress, and was always ready to welcome any movement indicative of it, and give it his hearty support."

7. Dr. Booth, who succeeded Dr. Bell in the superintendence of the McLean Asylum for the Insane, has been removed by death from the scene of those professional labours which he performed with much ability, and with unswerving, conscientious fidelity. "Nature," says the *Report* of the Trustees of the Asylum, "had endowed him with a temperament singularly well fitted to meet the harassing duties of daily superintendence of the insane. His tastes, training, and education, developed a character consistent in all its parts —quiet, firm, self-reliant. Kind-hearted, gentle in manner, and sympathetic, he secured the affection no less than the respect of his patients and subordinates. The years spent in our own and other kindred institutions had suitably prepared him for the great trust which nearly two years since was confided to his hands. With a patience and equanimity which no perverseness could disturb—with a cool, dispassionate judgment which no combination of difficulties seemed to shake—he kept on the even tenor of his way, with no uncertainty as to the line of his duty, and with entire courage in its execution."

Dr. John E. Tyler, late Superintendent of the New Hampshire State Asylum for the Insane, has been appointed to the place vacated by the decease of Dr. Booth.

Recalled, temporarily, to perform the duties of that office which he had previously filled for nearly twenty years, Dr. Bell took charge of the asylum during the last few weeks of the illness of his successor, and upon him devolved the duty of writing the report for the year 1857. As might be expected from the circumstances, this report is very brief.

	Men.	Women.	Total.
Patients in the Asylum Dec. 31, 1856 . .	94	102	196
Admitted in course of the year . . .	75	66	141
Whole number " . . .	169	168	337
Discharged, including deaths . . .	80	79	159
Remaining, Dec. 31, 1857	89	89	178
Of the patients discharged, there were cured	36	35	71
Died	12	16	28

"The circumstance of a large proportionate admission of recent cases, incident to its position and the professional and public confidence with which it has been long honoured, will explain the high ratio of recoveries registered year after year. * * * * Under the absence of all methods of controlling the stay of its inmates, it is to be expected that many will be prematurely removed before all has been accomplished for them which a curative hospital might reasonably expect to do. Even the entire relief from the pecuniary burden of the sufferer's support, as the application of the now duplicated Appleton fund has shown, will not always secure to him a full trial."

8. The printed reports, for 1857, of the trustees and executive officers of the Massachusetts State Lunatic Hospital, at Worcester, together with the by-laws of the institution, and a series of meteorological observations, form a pamphlet of more than one hundred pages.

	Men.	Women.	Total.
Patients in the Hospital, Dec. 1, 1856 .	184	192	376
Admitted in course of the fiscal year .	126	145	271
Whole number	310	337	647
Discharged, including deaths . . .	132	143	275
Remaining, Nov. 30, 1857 . . .	177[1]	195[1]	372
Of those discharged, there were cured .	74	76	150
Died	19	25	44

Causes of death.—Consumption, 7; epilepsy, 6; maniacal exhaustion, 5; marasmus, 4; palsy, 4; old age, 3; chronic meningitis, 2; erysipelas, 2; gangrene of lungs, 2; influenza, 2; apoplexy, 1; cancer, 1; chronic dysentery, 1; diarrhœa, 1; delirium tremens, 1; pneumonia, 1; suppurative phlebitis, 1.

"There has been during the year an unusual amount of sickness. In the summer and autumn there were several cases of fever and dysentery. There were also a few cases of pneumonia, and several cases of consumption. But a large proportion of the disease has been of an ill-defined character, afflicting those who have long been feeble and insane."

"Seven patients have been admitted whose insanity was probably caused by development of tubercles in the brain. After the acute stage of mental disease had subsided, they sank rapidly and died of consumption."

"Cathartics have entered somewhat largely into the medical treatment during the year. Perhaps we do not clearly understand the close relation existing between the brain and the condition of the alimentary canal. Much of the uneasiness and morbid sensibility from which so many of our patients suffer—that condition of mind which cannot be cheered by hope or diverted by pleasure, is frequently nothing more than the natural result of the sympathy existing between the morbid conditions of the alimentary canal and brain. We do not like to admit the frailty of man to such a degree that a slightly overtasked stomach, or a constipated condition of the bowels, will cloud all his worldly prospects, render him dissatisfied with life and all its blessings, and make him suspicious of friends and jealous of his household; but it cannot be denied; and the cure of that disordered state of the imagination so often observed in this class of patients, and their restoration to the best estate of manhood, may generally be brought about by the means directed to relieve the diseased state of the stomach and bowels. The process may be slow, but if perseveringly followed, and assisted by pure air, active exercise, and cheerful companionship, will be crowned with success."

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[1] These are the numbers given in the report; but to be consistent with the preceding statistics, they should be 178 and 194.

"No class of patients suffer more than those whose insanity is caused by disease of the digestive organs. The lassitude, the sense of oppression, the partial loss of memory, the inability to fix the attention, render them victims to every circumstance, and thus keep up a mental irritability sufficient to interfere with the healthy action of all the intellectual faculties."

The efforts of Dr. Bemis to avoid the restrictive measures of seclusion and confinement of the limbs by mechanical means, have been very successful. Like all others who have preceded him in the attempt, he has found such measures more frequently necessary with females than with males. "Since the first of July, however (a period of five months), there has been no application of mechanical restraint of any kind to any female patient under our care. Nor has any one since that time been secluded in her own or any other room a whole day. No male patient has been secluded in his own or any other room a whole day during the year. There have been two applications of mechanical restraint to male patients in the course of the year. In one case the restraint was immediately removed. In the other the patient was suffering from a surgical operation, and wrist-bands, which he wore for several days in succession, were placed upon him for the purpose of securing dressings." The average number of patients, of both sexes, for the year, was 387.

Dr. Bemis again gives testimony to the great importance of manual employment as a means of improving the condition of the incurable insane, and of restoring to mental health those who are curable. In this he but reiterates an opinion which has been expressed by nearly every author of an official report emanating from an institution for the insane upon this side of the Atlantic, and which all who are conversant with the subject, well know universally prevails in every European nation where the treatment of insanity has been carried to a state the nearest approximating perfection. Indeed, there is a unanimity of opinion upon this subject, which obtains perhaps upon no other point in the hygienic and therapeutic management of disordered manifestations of mind. In the acute stage of the disorder, medication, of course, is generally required; and under this treatment alone many patients recover. But that stage soon passes, and with it, generally, the indications for medicine. Ever after, until restoration—and often even during the latter part of the acute stage—occupation, employment, *useful manual labour*, is the "sheet-anchor" of the curative treatment. In this lies the greatest hope of salvation from confirmed perpetual mental alienation. How shall that anchor be cast? Hitherto it has been approached, almost universally, in this country, with steps as delicately chosen, and as softly planted as if the deck of our medical ship were covered with the fragments of glass bottles, and handled as cautiously as if it were lunar caustic, or as if it had but just filled the office of a bed to a steerage-passenger dying of the plague. We have too generally taken this position. *Labour is the best of all curatives for certain classes of patients, yet no patient shall be compelled to labour.* We will, *nolens volens*, force calomel, and jalap, and ipecac, and antimony, into his stomach, with the pump; we will manacle his hands and apply blisters to any extent which may be considered justifiable; but we will not compel him to work. And why not? *Oh! because he is a poor, unfortunate, afflicted fellow-being; he is insane.* Now, so far as our knowledge extends, no parallel anomaly, or paradox, exists in any other class of institutions, curative, educational, custodial, reformatory, or penal.

What opinion should we form of the surgical staff of a general hospital, if upon opening one of their reports, we should read as follows: The metallic self-adjusting extension and counter-extension splint, invented by Dr. Bandage, is acknowledged by us, as by all good authorities in surgery throughout the civilized world, to be the best apparatus ever designed for the treatment of fractures of the femur. We are almost entirely debarred, however, from the use of it, by objections of two kinds; these are, 1st. Sympathy with the sufferer. The man with fractured femur is an afflicted, unfortunate fellow being; are not his sufferings sufficiently great without the pain of a forced extension of the muscles, and the additional grief of being loaded with irons? 2d. Many of our patients with fractured femur, have a notion that it is derogatory to a man to have his leg confined. "The bill of rights of our State," say they, "expressly declares that no man shall be deprived of liberty except for crime. But if a man's leg be placed in such a splint, that leg, at least, is essentially imprisoned; and as the leg is about one-sixth of the man, it necessarily follows that the disgrace attached to the wearing of the splint is one-sixth as great as that of actual corporeal incarceration." For these reasons we avoid the use of the splint except in a few cases in which the patient likes to try it just for the amusement of the thing, and a few others in which he has not assumed as true the hypothesis that a bound and splinted leg derogates from his dignity. The general results are, as might be expected, that many fractured femurs never unite, and in many cases in which union takes place, the leg is either shortened or distorted.

This is utter absurdity, and yet there is an almost precise parity of reasoning with that of all who avow the paramount utility of manual employment in the treatment of mental alienation, yet assert that no patient should be compelled to labour.

The general abstract proposition of the dignity of labour is entirely out of place in this connection. That is a question properly relating to individuals and communities enjoying the normal use of the intellectual and the moral faculties. We here have to treat of manual employment only as a medical resource, as part and parcel of the general materia medica, just as we would treat of antimony or ipecacuanha. A man might conceive it to be undignified, if in health, to be daily dosing himself with either of the emetics just mentioned, and yet would not hesitate properly to resort to it in disease. Where is the principle, or what the element, that should make the logic fail when applied to labour? We cannot perceive any. True sympathy for the insane should induce the employment of any restorative means which presents great probabilities of success. If a patient suffer with neuralgia from a carious tooth, does the dentist hesitate to apply the necessary remedy, even if it be the instrument for extraction? If in any disease, local depletion be indicated, do we fail, through sympathy for the patient, to resort to the scarificator? True sympathy urges its use, not the avoidance of it.

"Nothing," says Dr. Bemis, "so soon interests the visitor at an English asylum, as the amount of useful labour performed by the inmates. We have seen the result of a thorough system of employment in an English asylum for the insane, which might shame almost any industrial institution in our country."

The doctor might well have added, that the American asylums will never attain an equality, *as curative institutions*, with those of England, until a similar system shall not only have been adopted, but faithfully put in execution by them. We do not believe there is a public institution for the insane in the United States, the superintending physician of which, as he might pass with a companion through its halls, could not truly say, as he specified certain patients: Here is a man, there is another, and yonder you see a third, who might all be cured if they were subjected to a salutary system of manual employment, varied in kind and in degree according to the characteristics of the patient and of the disease, in the cases severally. As it is, they never will recover. Not alone is this true, but all the incurables which you see around us, might be vastly improved by such a system.

The companion, were he a rational and reasonable man, would doubtless ask in amazement: Why, then, in the name of all that is good and true in humanity, do you not introduce such a system?

Perhaps the answer might be: Public opinion is not yet sufficiently ripe for it.

Ripen it then, is the earnest rejoinder; ripen it as quickly as possible. Let the summer sunlight of your annual reports fall freely and fully upon it, that it may come to maturity before many more of your fellow-men are thus needlessly obliged to drag out a life useless to all and perhaps burthensome to a few, within the walls of your establishment.

Every succeeding year has more and more strongly fortified our opinion, formed some twelve years ago, that the number of cures in the hospitals for the insane in this country, will never attain its maximum until the physicians to those institutions shall be free to *prescribe* labour, and to require the *administration* of that prescription, whenever they may think it indicated; and until the friends of the patients shall say to those physicians: Here is our father, our brother, our son; take him under your care; treat him as you would wish to be treated if in his condition; if you think he requires medicine, give him medicine; if that medicine be labour, by all means let him labour, willingly if it so be; otherwise, upon compulsion.

9. The convenience, economy, and usefulness of a farm in connection with an institution for the insane, appears to be very generally recognized and acknowledged at the present day. No one who has studied the nature of the disease for the treatment of which those institutions are established, can fail to perceive the manifold advantages of one which is situated in the country, with a broad territory of many acres under its command, over one in the midst of a dense population, penned by the high walls of adjacent buildings. The chief wonder in relation to hospitals or asylums of the latter class, is that any of their patients, other than a few of the recent cases, which generally yield to a brief medical treatment, should recover their mental health.

The Trustees of the Maine Insane Hospital having learned, from the observation acquired in their office, the many advantages alluded to, have, in the course of the last fiscal year, increased, by purchase, the quantity of land belonging to that institution.

	Men.	Women.	Total.
Patients in the Maine Hospital Nov. 30, 1856	105	85	190
Admitted in course of the year . . .	79	65	144
Whole number in course of the year . .	184	150	334
Discharged, including deaths . . .	66	60	126
Remaining Nov. 30, 1857	118	90	208
Of those discharged, there were cured .	36	33	69
Died	9	6	14

Causes of death.—Consumption, 3; exhaustion, 3; dropsy, 2; marasmus, 2; congestion of brain, 1; disease of heart, 1; serous apoplexy, 1.

"The number of deaths," says Dr. Harlow, "has been less the past year than for several previous years. We have had no death by suicide in the institution for a period of more than twelve years. Only two patients have ever succeeded in taking their own lives since it was opened, and there have been two hundred and twelve who were thus inclined. We have also been very fortunate in escaping accidents from homicidal patients, although we have always had several of this class under treatment."

Of the 144 patients admitted, 70 "have insane relations, and were hereditarily predisposed to the disease."

In connection with the etiology of insanity, Dr. Harlow says: "The old adage, 'Spare the rod and spoil the child,' was never more true or better illustrated than it is in this nineteenth century. Closely following, or coeval with this, is the pernicious practice of forcing intellectual culture, to the neglect of the physical functions of the body. Like plants which receive their nourishment and growth in a hot-house, the children of the present day, with their soft, flabby muscles, and pale faces, wither and dwarf as soon as they reach their native element. The age at which children are placed at school should depend upon their physical development and strength. Few, we think, are able to bear this with impunity before the age of eight or ten; and could every child be kept from school, with correct training, till a still later age, our men and women would have stronger intellects and firmer health of body."

In these notices of reports, we often, without remarks or comment, make extracts, the sentiments contained in which are diametrically opposed to our own. We are willing that the writers thereof should be heard, without the interposition of our objections to their opinions. With reference to most of the last quotation, however, we fully coincide with Dr. Harlow. No memory of the past is more vivid than that of the admiration and delight with which we first beheld the performances of the pupils of an infant school. But that was before we studied medicine: at a time when we were charmed, as so many others are charmed, with precocity; before we had learned that physical strength, and energy, and endurance, must be based upon, and constantly supported by, a full, vigorous, and tonic development of the body. We now believe that among the curses which civilization and modern progress in the arts and sciences have inflicted upon our race, there is hardly a greater than those schools which we once looked upon with so much pleasure.

"It is a fact," says the report before us, "lamentable as it is, that there are now in this hospital three sisters, offspring of inebriate parents; and we are told that a fourth is a fit subject, and may soon be brought here."

The Maine Hospital has been in operation a little more than seventeen years. The general statistics for the whole period are as follows:—

Patients admitted	1852
Recovered	754[1]
Died	226

"Every year's experience in the treatment of the insane," remarks Dr. H., "strengthens my conviction of the paramount importance of physical labour in the open air as a means of restoring them to mental soundness. Within the last few months, we have made an extra effort to benefit our female patients by employment, and with a success greater than we expected. A faithful person has been employed to oversee and direct all those who are willing to come together from the various wards into a room for industrial purposes, where they make bedding and clothes for the household."

The practice of convening the working female patients, as mentioned in the extract, in a room disconnected with the wards, is among the most useful of the measures of moral regimen, particularly in establishments like most of the State hospitals. We are surprised that its introduction at the Maine Asylum has been so long delayed. It was in vogue at some of the institutions in this country, before that asylum was founded. P. E.

Art. XXVI.—*Medico-Chirurgical Transactions.* Published by the Royal Medical and Chirurgical Society of London. Volume the fortieth. London, 1857. 8vo. pp. 288.

This volume of Transactions contains fifteen original communications. Nine of these communications, together with the remarks elicited by their reading in the Society, were published in the numbers of this journal for last year, in the quarterly summaries of improvements and discoveries in the medical sciences.

I. The first paper on the list is one "*On the Treatment of Aneurism by Manipulation,*" by William Fergusson; it was published, or at least a very full summary of it, in the January (1857) number of this Journal. We are not aware that the plan herein recommended has ever been adopted in more than one other case, besides in the two recorded. The manipulation of an aneurism, whereby the fibrin within may possibly be so displaced as, either in part or in whole, to block up the main artery on the distal side of the disease, is, in fact, a process too dangerous to be otherwise than exceptional in its application. It should, of course, never be thought of except in cases where the aneurismal sac is so near the trunk of the body that indirect compression cannot be applied; and we are strongly inclined to believe that even in such cases, it should not be attempted.

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[1] So stated in words. The figures of the table make 752.

II. The second communication contains the history of a case in which a *large cyst* was successfully removed from the upper part of the neck of a young woman aged 27, who was considered at birth to have been the subject of *spina bifida;* by SAMUEL SOLLY.

This case, which is one of rare interest, is believed by Mr. Solly to be unique. "whether it be considered as an instance of a cyst of a spina bifida exuded from the spinal canal at an early period, or as a case of an aqueous tumour originally connected with the occiput." The patient, a fair, delicate-looking young woman, 29 years of age, with a bright expressive countenance, and her intellect perfect, had a tumour which was hard and unyielding, about the size of a goose-egg, flattened anteriorly, hanging by a broad thick band to the upper part of the neck a little below the occiput; it had existed since birth, increased in size somewhat during the first three years of her life, and afterwards diminished. Having a prospect of marriage, she was very anxious to have this tumour removed. The operation was attended with no difficulty, but the subsequent hemorrhage was quite troublesome; and for some time shooting pains in the head, with numbness in the arm, caused some anxiety. The patient was still in the wards (Oct. 22, 1857), two months having then expired since the operation. She had no bad symptoms, and the wound had nearly closed. The following is the account given of the examination of the tumour:—

"A longitudinal section through the centre exposed a large cavity in the interior, the walls of which were about the third of an inch in thickness. The cavity appeared to be about a third smaller than the tumour. In removing this section I was obliged to use a saw, in consequence of the walls containing firm calcareous plates, as designated in the drawing. The cyst was filled with a viscid fluid of a yellowish colour, not unlike white of egg. The cyst itself was entirely closed, but the line of junction with the spinal canal could be clearly traced by a whitish-yellow line of ligamentous tissue running through the peduncle. The interior lining of the cyst was smooth, except in the situation of the calcareous deposits.

"Some of the ligamentous structure from the peduncle, which apparently filled the old canal of union between the tumour and the vertebral canal, presented, under the microscope, the usual characters of the yellow elastic tissue. The tissue, which forms the immediate wall of the cyst in contact with the lining membrane, looked and cut exactly like cartilage; but under the microscope it exhibited nothing but a dense fibrous tissue, containing interspersed through its meshes calcareous granules, which disappeared on the addition of acetic acid. The calcareous plates consisted of carbonate and phosphate of lime, not shaped into bone-tissue."

A coloured plate representing the section of the tumour is added to this paper, and also two plates representing the patient at the ages of one and a half and twenty-nine years.

III. *On the Determining Causes of Vesicular Emphysema of the Lung.* By WILLIAM JENNER, M. D.—This paper, with the discussion which arose at its reading before the Society, is published in the April, 1857, number of this journal.

IV. *Five Cases of Tracheotomy in Croup, with remarks on certain points connected with the operation.* (With a postscript containing two additional cases.) By HENRY WILLIAM FULLER, M. D.—This paper, together with the discussion it called forth, is also published in the April, 1857, number of this journal. It is rather remarkable that the author should not speak of cauterization of the windpipe after the operation, nor of the application of a kind of cravat over the canula, in order to replace the mouth, nose, and fauces, and warm and moisten the air. Trousseau attributes to *cauterization* and the *cravat,* his increased success in tracheotomy; at the *Enfants Malades,* one-fourth of the patients now recover. One of the author's statements, namely, "that out of the first hundred cases operated on at the Hôpital des Enfans, at Paris, no less than ninety-nine proved fatal" (p. 56), is not correct. He does not give any authority for it.

V. *Some Observations on the Anatomy and Physiology of the Adult Prostate*, founded upon fifty preparations of the organ, dissected by the author, and accompanying the paper. By HENRY THOMPSON.—This paper was given in the April number of this journal for 1857, and a notice of his complete work on the prostate gland, is contained in the April number for this year. The paper is illustrated by two coloured plates, containing numerous figures.

VI. *On Disarticulation of the Scapula from the Shoulder-joint.* By JAMES SYME.—In this communication Mr. Syme gives the history of a case in which he removed the entire scapula, which, so far as he is aware, is an operation new in the practice of surgery. The patient, a woman, nearly seventy years of age, had a large tumour involving the left scapula, which in size and form resembled a cocoa-nut. In the operation the entire bone was removed, the knife being carried into the joint and around the glenoid cavity, and the connections of the acromial extremity of the clavicle being divided. The patient died exactly two months after the operation "without any reason that could be discovered except old age." Mr. Syme considers that the progress of the case was sufficiently advanced for the settlement of some points possessing practical importance. These are, that the entire scapula may be disarticulated from the shoulder-joint without a loss of blood to any great extent; that the wound resulting from this operation does not necessarily occasion an excessive amount of discharge; and that the arm which remains is not a useless appendage, but a serviceable limb.

This case of Mr. Syme is probably the only one on record in which the entire scapula has been removed, when the arm was still attached to the body. In a case where the arm had previously been removed at the joint for disease, the affection returned in the scapula and Mr. Fergusson removed the whole bone, the clavicle being divided with a saw two inches from the acromial extremity. (See this journal, for October, 1848.) Professor S. D. Gross on one occasion removed nearly the whole bone for an enormous osteo-sarcomatous tumour; the acromium process was sawed through and also the neck of the scapula. This case was reported in full in this journal for April, 1853.

VII. *On a New Method of Operating for Impermeable Urethra.* By JAMES SYME.—This paper, with the observations made upon Mr. Syme's procedure by Messrs. Coulson, Benjamin Travers, and Hutchison, was published in this journal for July, 1857.

VIII. *Case of Double Talipes Varus*, in which the cuboid bone was partially removed from the left foot. By SAMUEL SOLLY.

The patient was a stout, muscular man, twenty-one years of age. The condition of the feet afforded a perfect specimen of talipes varus in its worst form, the left foot being shorter and rather more inverted than the right, nor could it so easily be turned or moved towards its natural position. There was an entire absence of calf in both legs; the gastrocnemii and other muscles were all imperfectly developed. The tendons of a number of muscles were divided, and shoes of peculiar construction were applied to bring the feet to a natural position. The left foot still resisting the treatment employed, at the suggestion of Dr. Little, a great part of the cuboid bone was removed by means of a sharp gouge, the articulation with the metatarsal bone of the little toe being opened, but not that with the os calcis. On account of being obliged to wait three weeks for the healing of the wound before pressure could be applied, and then only at intervals, most of the advantage expected to be derived from the excision was lost. Mr. Solly says himself: "With regard to the effect produced in this case by the removal of the cuboid bone, I do not consider it is such as to encourage the profession to perform the operation, except in some old and obstinate cases that have resisted every other treatment." Another consideration, besides that of inutility, is the danger of the operation, which Mr. Solly does not refer to; all extractions of bones of the foot are more or less dangerous, and, in this operation, the articulation of the scaphoid with the three cuneiform bones is liable to be opened.

IX. *On Forcible Extension and Rupture of the Uniting Medium of Partially Anchylosed Surfaces.* By BERNARD E. BRODHURST.—This paper of Mr. Brodhurst, with the debate that followed its reading before the Society, is in the June number of this journal for 1857.

X. *On Scirrhus of the Male Breast.* By J. L. MILTON.—In this communication, Mr. Milton reports a case which came under his own notice, and he has, in addition, collected together whatever cases he could discover, so that those interested in the subject can be able to find them here in an available form.

XI. *Analysis of Fifty-two Cases of Epilepsy, observed by the Author.* By EDWARD H. SIEVEKING, M. D.—This paper, together with the interesting remarks called forth by its reading, is published in the July number of this journal, 1857.

XII. *A Case of Disease of the Heart, with great Dilatation of the Auricles.* By W. O. MARKHAM, M. D.—This case is one of great interest; it presents some unusual phenomena which appear but little in unison with the generally recorded experience of clinical observation, and shows how compatible, under certain conditions, a long life is with a very unhealthy state of the great central organ of the circulation.

The patient was a man 69 years of age, and for about thirty years he had been the subject of organic disease of the heart; of that degree which demonstrates its presence not merely by the existence of a small cardiac bruit, but in severe derangements of the functions of the circulation and the respiration. He had been subject to more or less difficulty of breathing, to palpitations, to spasms, and to occasional attacks of dropsical swelling of the legs.

The physical signs were those of great enlargement of the heart and extensive valvular disease. "At a point about an inch and a half or two inches from the right edge of the sternum, and in the fifth intercostal space, a *pulsation* was observed, synchronous with the ventricular systole. This pulsation was visible along a space of about three-quarters of an inch; it communicated a strong thrill to the finger placed upon it, and likewise forcibly raised the finger. The stethoscope, placed over it, transmitted to the ear of the observer a loud, prolonged, rough murmur." With this condition of things, Mr. Markham was led to the conclusion, "very guardedly expressed," that the pulsation was aneurismal.

At the post-mortem examination, the following was the condition of the heart. "The *right auricle*, even when emptied of its contents, was still dilated to at least five or six times its natural capacity; its parietes were reduced to a mere membranous condition, and presented no trace of muscular tissue, excepting in the auricular appendix. The *tricuspid orifice* was considerably dilated, but its valves were correspondingly enlarged, and appeared capable of well closing the opening. The *right ventricle* was much dilated and hypertrophied. The *left auricle* was enormously dilated; its cavity, when distended during life, could not have contained less than from sixteen to twenty ounces of fluid; when slit open, it measured about sixteen inches in its widest circumference; it was reduced to the condition of a mere membranous sac, no trace of muscular tissue being perceptible in any part of it. The *mitral orifice* was contracted into a hard, cartilaginous-like slit, about an inch long; the *mitral valves* were hardened, thickened, contracted, and partially united at their borders, but would probably have permitted only slight regurgitation during the ventricular systole. The *left ventricle* was slightly dilated and hypertrophied. The *aortic orifice* was somewhat contracted; its valves were thickened, but appeared capable of closing the orifice; there was but little atheromatous degeneration of the aorta. The *muscular tissue* of both ventricles was in a far advanced state of fatty degeneration."

It should be stated, in explanation of the great prolongation of life in this case, that the patient had the means and also the will necessary to subject himself to a most rigorous discipline.

This case presents a point of great interest in relation to the physical diagnosis of cardiac diseases. When the thorax was opened, the right auricle was found occupying that portion where the pulsation had been felt, and also all the parts immediately surrounding that spot. Hence it became evident that the pulsation, the thrill, and the loud prolonged bruit, took their origin from the right auricle. The pulsation had occurred during the ventricular systole, and must have therefore been coincident with the auricular diastole; it evidently, therefore, must have been caused either by tricuspid regurgitation of blood, or by the rush of blood from the venæ cavæ into the auricle, or by a combination of both these causes. The perfect condition of the tricuspid valves, the degree and character of the pulsation itself, and the absence of pulse in the cervical veins, seem to indicate that the pulsation was not caused by tricuspid regurgitation. The thrill also was not that of tricuspid regurgitation, which is invariably of a soft, gentle, blowing character; and, indeed, tricuspid regurgitation is more frequently unaccompanied than accompanied with murmur. It would seem, then, that the blood rushing into the auricle from the venæ cavæ during its diastole caused these phenomena, and if so, there must be a much greater force in the venous current, passing from these veins into the auricle, than is generally attributed to it.

XIII. *Case of Intense and Long-continued Photophobia and Blepharospasm relieved by the inhalation of Chloroform.* By William Mackenzie, M. D.—This case is published in this journal for October, 1857.

XIV. *On the Effects of Twelve Weeks' Residence in Bulgaria* (*during the months of June, July, and August*, 1854); *on the subsequent health of the British troops in the Crimea.* By William Aitken, M. D.—This paper is very well drawn up, and the author shows clearly that the pernicious influence of the malarious climate of Bulgaria persisted among the British troops after leaving that country for the Crimea. In the inquiries into the nature and origin of the sickness and diseases of the British troops in the Crimea, this influence, it appears, has been entirely overlooked.

Dr. Aitken classifies the British army in the Crimea into two parts; those troops which served in the Crimea only, and which he terms simply the *Crimean* troops, and those which served both in Bulgaria and in the Crimea, which he calls the *ex-Bulgarian.* The actual deaths are compared in each, and the ratio of these to the admissions and to the original strength; also the ratio of deaths and invaliding to the admissions, and to the original strength of each of the two divisions of the army, with the percentage of drafts required to recruit the strength of the troops in each of the two divisions of the army.

Though interesting to all medical men, the paper is, naturally, particularly so to the author's countrymen.

XV. The last communication in the volume is entitled *Further Observations on the Use of the Speculum in the Diagnosis and Treatment of Uterine Diseases,* by Robert Lee, M. D., an abstract of which was published in this journal for October, 1857.
W. F. A.

Art. XXVII.—*A Manual of Obstetrics; Theoretical and Practical.* By W. Tyler Smith, M. D., Member of the Royal College of Physicians, Physician Accoucheur to, and Lecturer on Midwifery at, St. Mary's Hospital. 12mo. pp. 628. London, 1858.

The present work, as we are informed in the preface, consists of the substance of a course of lectures by the author, which appeared in the *London Lancet,* in the year 1856, thrown into the form of a manual at the request of the publisher.

The name of Dr. Smith is a sufficient guarantee for the general accuracy of the theoretical teachings, and practical directions of the manual. It bears, nevertheless, as the author himself admits, marks of no little haste in its preparation—a want, more especially, of a uniformity in the development given to the different important topics embraced in the theory and the art of obstetrics. Whatever relates to the physiology of conception, pregnancy and parturition has a prominence given to it, and is discussed with almost as much fulness as would be demanded in a complete practical treatise, while many points connected with the management of labour in its different phases are dismissed with remarks too curt and general almost for a simple manual of obstetrics.

Even the two or three puerperal diseases included in the volume are treated of with a fulness greatly disproportionate to the summary manner in which nearly all that relates to practical midwifery is considered.

We have nothing especial to object to the views and instructions laid down in the manual—on the contrary, with the author, in most of his theoretical teachings, we fully agree, and have no disposition to question the accuracy of his clinical directions. All we complain of—if it be correct to say that we complain at all—is that the work is somewhat anomalous in its character; in some of its chapters presenting a fulness belying its assumed title of manual, while the conciseness of others prevents it from being received as a complete practical treatise.

We like the arrangement adopted in the volume before us—those subjects which mutually illustrate each other being placed as nearly as possible in juxtaposition. For instance, in place of treating of the pelvis and the fœtal cranium at the commencement, they are described anatomically and in their normal obstetrical relations, immediately before the consideration of the mechanism of labour, with which they are so obviously concerned. In like manner, the deformities of the pelvis are treated of in the chapters preceding the subject of difficult labour from that cause. We cannot see, however, any propriety or advantage of placing, as the author has done, the chapters devoted to puerperal mania, puerperal convulsions, puerperal fever, phlegmasia dolens, and other affections of the puerperal state, before those which treat of the induction of premature labour, turning, the use of instruments, the Cæsarean section, etc.

In the concluding chapter, the various causes of death, from childbirth, are grouped together and compared; and the means by which we may reasonably hope that the amount of mortality, both as regards the mother and child, will be considerably diminished hereafter, are insisted upon.

The manual is illustrated by one hundred and eighty well executed engravings, upwards of twenty of which have been contributed by the author, the remainder being borrowed from the various current works on the subject of midwifery.

D. F. C.

Art. XXVIII.—*Reports of the Provincial Lunatic Asylum of New Brunswick, for the years* 1854, 1855, *and* 1856.

By the kindness of Dr. John Waddell, Superintendent of the Provincial Lunatic Asylum of New Brunswick, we have received the reports of that institution for the three years terminating with 1856. They are less elaborate than most of the similar publications emanating from kindred institutions within the United States; and the larger part of their contents is matter of merely local importance.

A remark in a former notice, in this journal, of reports from the New Brunswick Asylum has called forth, from Dr. Waddell, a brief account of the origin of the institution. He says: "Previously to the erection of the Provincial Lunatic Asylum, there existed in the city [St. John], for a number of years, a provisional Institution for the Insane." The buildings now occupied were so far completed as to permit occupation by officers and patients on the 12th of December, 1848.

Patients admitted under the superintendence of Dr. G. P. Peters,[1] and by transfer from the provisional institution, on the day just mentioned	90
Admitted from that date to October 31, 1856	646
Whole number	736
Discharged, including 134 deaths	586
Remaining	150

The whole number of cures is not stated.

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[1] Dr. Peters was succeeded by Dr. Waddell on the 6th of December, 1849.

The increase of admissions is shown by the following numbers of patients received from 1849 to 1855, inclusive: 48, 59, 67, 88, 92, 108, 101. In ten months of 1856, the number admitted was 81.

Relative to the mortality, which, as will be perceived, is large, Dr. Waddell says: "It is important to notice that in the Province there is no separate receptacle for the incurable insane; that the poor are supported at the expense of the Provincial Government, and that when an individual becomes a burden to friends or the parish, and it can be certified that the mind is not sound, he is sent here."

	Men.	Women.	Total.
Patients in the Asylum, December 31, 1853	70	57	127
Admitted in the 2 years and 10 months covered by these reports	160	130	290
Whole number	230	187	417
Discharged, including deaths	152	115	267
Remaining, October 31, 1856	78	72	150
Of those discharged, there were cured	79	44	123
Died	31	34	65

The subjoined extract is from the report for 1854.

"The leading event of the year is, that cholera was in the city and neighbourhood around us, and that we escaped. On its approach, our first duty was to *see* that, beyond doubt, the premises, in every part, were as nearly as possible, in a state of thorough cleanliness. Great attention to diet was observed; bread was substituted for vegetables; attendants were induced to remain at home, and the whole household, as far as possible, was isolated from the scenes of distress reported in the vicinity. * * * * * At the time cholera prevailed, and for weeks after it had passed away as an epidemic, the digestive organs of the whole household were in a highly irritable condition. In many cases diarrhœa and dysentery were developed; in others, irritability induced discomfort; and in all, the vital powers were lowered; and those who were before much exhausted, from chronic ailments, as the season advanced, one after another, gradually yielded to the complicated causes of depression, and finally sank."

In the report for 1855, it is stated that a new wing was opened early in November of that year; and that, on the 30th October, two of the "most experienced attendants came to their death by the violence of one of the patients."

In the report for 1856, Dr. Waddell urges previously alleged arguments in favour of the still further extension of the building, and the introduction of apparatus for heating by steam and lighting by gas.

Art. XXIX.—*Ophthalmic Hospital Reports and Journal of the Royal London Ophthalmic Hospital.* Edited by J. F. Streatfeild. Oct., 1857, Jan., 1858.

We have at present the space only to announce this periodical, which supplies a desideratum in medical literature, and to bespeak for it the patronage of the profession in this country. It is issued quarterly, and the two numbers before us contain papers of great practical interest and value. We shall give a further notice of them in our next.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Flow of the Lacteal Fluid in the Mesentery.*—Joseph Lister, Esq., read before the British Association a short account of some experiments performed hy him in 1853, but now first made public.

"The objects for which they were undertaken were, in the first place, to observe the character of the flow of the chyle through the lacteals: a thing which, so far as I know, had never been satisfactorily done; and, in the second place, to throw some light, if possible, upon the debated question, whether or not the lacteals possess the power of absorbing solid matter, in the form of granules, visible to the human eye. In the experiments made for the former purpose, a mouse having been put under the influence of chloroform, about two hours after partaking of a full meal of bread and milk, the abdominal cavity was laid open by a median longitudinal incision, and the animal having been placed on its side upon a plate of glass, a coil of intestine was drawn out gently, sufficiently far to admit of the microscope being applied to the mesentery, which was kept moistened with water of about 100° Fahrenheit, under a four-tenth object glass. The lacteals were readily recognized as beautiful transparent beaded cords, the beads corresponding to the situations of the valves, which were observed to be standing open while the chyle corpuscles moved along through the tubes with a perfectly equable flow, at a rate about a quarter of that at which the blood passes through the capillaries. There was nothing like rhythmical contraction to be observed in the vessels, and it was evident that the source of the movement of the fluid was some cause in constant and steady operation. Chyle corpuscles, apparently fully formed, to judge from their size, were observed constantly passing along, even in parts very near to the intestine, the scene of absorption, showing the rapidity with which those corpuscles are elaborated. These observations were repeated several times.

"The other set of experiments were conducted in the same manner, except that some insoluble granular material, such as indigo, carmine, or flour of sulphur, was mixed with the food. The animals partook freely of the mixture, which also passed on into the intestines, yet none of the colouring particles were ever to be seen in the lacteals by aid of the microscope, although, had they been present in the granular form in the chyle, they would have been certainly detected, being quite different in appearance from the normal constituents of the fluid. It may be imagined that the substances administered exercised a poisoning influence, and paralyzed the function of absorption. There was, however, no appearance of any such thing, the chyle presenting the same characters both as to its constitution and rate of flow as when simple bread and milk had been alone administered. These facts, though not, perhaps, absolutely conclusive, appear to throw great doubt upon the interpretation which has been given of the alleged cases of absorption of indigo and some other granular substances, and render it probable that the lacteals are incapable of admitting visible solid particles through their parietes."—*Dublin Hospital Gazette*, Nov. 15, 1857.

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2. *On Certain Pathological Characters of the Blood-Corpuscles.*—J. P. HENNESSY, Esq., communicated to the British Association the following results of a series of microscopical observations with regard to healthy and inflamed blood. With regard to healthy blood:—

"1st. That the particles in the lower part of the clot were smaller than those in the upper part, and that, in the bloody serum, the particles which subsided to the bottom of the vessel were smaller than those which floated at the top. In every case, the redness appeared to be in an inverse proportion to the size. 2d. That, after removing the greater part of the fibrin by stirring the blood with a bundle of twigs, the particles which were not disintegrated were larger and paler than usual.

"With regard to inflamed blood, that is, blood drawn from a patient suffering from an inflammatory disease, or blood taken from a part of the body in a state of inflammation, I arrived at the following results:—

"1st. That the particles were smaller and darker than those of healthy blood; the average size of the former being the 4,500th part of an inch. 2d. That, when some of these particles were exposed to the air, and dried, they became larger, attaining, in general, the size of healthy particles, treated in a similar manner. (Mr. Hennessy exemplified this by a verbatim extract from his notes.) 3d. That, where the blood drawn presented the buffy coat, the few particles among the meshes of fibrin in the upper part of the clot were very large, compared with those at the bottom of the clot. 4th. That, on shaking a vessel containing blood from which the clot with buffy coat had been removed, the particles which subsided most rapidly were found to be the smallest and darkest."

The principal fact to be gathered from these results, and to which Mr. H. wishes to direct particular attention, is "that the particles in blood in a state of inflammation are smaller, darker, and of higher specific gravity than those of healthy blood. Regarding this change in the blood-corpuscles as one of the *propria* of inflammation, we are led at once to consider the connection it may have with other phenomena attendant on that state. The questions arise—how far it may account for the appearance of the buffy coat; how far it may go to explain the well known changes of temperature, colour, size, and pain; and whether it may not also furnish some explanation of the action of certain therapeutic agents; in short, how far this molecular change may be employed as the basis for a satisfactory theory of inflammation. The immediate or rather the concomitant physical phenomena attendant on the contraction of the blood particles, are a development of latent heat, an increase of colour, and an increase of specific gravity. Whatever may be the amount of heat developed, however small in each particle the change of colour or increase of specific gravity may be, these are inevitable results of the contraction. On the other hand (and this is a point of great interest, to which I will shortly advert) when the particles are regaining their normal state, an opposite series of phenomena must be presented. Let us apply these results to the physical signs of inflammation. The development of latent heat will explain the rise of temperature. The contraction will effect the colour of an inflamed part, not only by rendering the particles darker, but by permitting them to flow into vessels from which their size had previously excluded them. In becoming smaller, they will necessarily become harder, and be enabled to burst through the walls of the capillaries, which would account for the phenomena of infiltration and pain. The increase in specific gravity, and a diminution in size, are the two causes which conspire to form the buffy coat: the former causing the particles to sink more rapidly, and the latter allowing them to pass through the coagulating meshes of fibrin with less chance of being obstructed."—*Dublin Hosp. Gaz.*, Nov. 15, 1857.

3. *Congenital Fissure of the Sternum.*—M. Groux, the subject of this case, which we have already noticed in the No. of this journal for Oct. 1855, p. 483, was recently introduced to the Medico-Chirurgical Society of Edinburgh by Prof. Bennett, who made the following interesting explanation of the particulars of this malformation:—

"M. Groux is 28 years of age; he was not aware of any remarkable peculiarity existing, until he came under treatment upon being attacked by cholera, when the malformation was detected and pointed out to him. Since that time, 1852, it has attracted so much attention that he has been examined in all the medical schools of Europe, as the names in his album can testify. I have, said Dr. Bennett, examined him carefully, and shall briefly state the principal facts which I have observed. Some years ago, while acting as pathologist to the Royal Infirmary here, I opened the body of a woman, in whom the same lesion as that in the present case was found to exist. And here it may be mentioned that it was only since coming to Edinburgh that M. Groux had found that his own case was not unique. The fissure in the body, of which I speak, presented a margin of bone down each side, at the insertion of the cartilages of the ribs. I cannot recollect of what disease the woman died; but so remarkable did I consider the case to be, that I had the ribs cut out and preserved, as you see them here. (Professor Bennett exhibited this preparation to the Society.) In the case of M. Groux, the fissure presents the form of the letter V, base upwards, and through this fissure may be seen the action of the right side of the heart, to see which, in the human subject, constitutes rather a strange phenomenon. M. Groux possesses the power of dilating the fissure by the action of the muscles of the chest and shoulders; but, at present, I shall confine myself to directing your attention to the phenomena exhibited by the action of the heart and lungs. The first thing which struck me upon examining the case was the pulsating tumour seen in the centre of the cleft. The motion at this part exhibits a remarkable wave-like character, apparently as if the cavity were never empty, a species of very violent undulatory pulsations appearing to take place in it. This motion is that of the right auricle. Further down we perceive another motion; a sort of contracting motion, which is here seen; and this, I think, is that of the right ventricle. Much discussion has taken place regarding this point; but time will not permit me to enter into that controversy; all I wish to state is, that I consider this motion synchronous with the contraction of the right ventricle. Then, by paying great attention, we may observe again that the wave-like motion immediately precedes this action; this M. Groux demonstrates on himself, by means of a contrivance with small strips of sticking-plaster. At the upper part of the fissure, again, we may feel another pulsation, which is evidently that of the aorta; this and the lowest motion are synchronous, and the whole seem to pass gradually one into another. Supposing this to be a correct view of its nature, and an accurate description of the movements seen in this case, it struck me that the general views entertained with regard to the position of the heart in the body must be incorrect. We have no reason to suppose that the position of the heart in this case is abnormal, as the apex beats in its natural position, and the dulness on percussion is the same as in health. The sounds also are normal. When the stethoscope is applied over the fissure, we hear only the healthy sounds greatly exaggerated. But, without referring at present to any other anatomical drawing, I have brought with me Dr. Sibson's very accurate plates. These were drawn with mechanical exactness from the dead body, having been sketched through transparent gauze stretched upon a frame adapted for this purpose. On looking at them, we see that the right side of the heart passes over the right margin of the sternum. In the plate illustrating Dr. Hope's work, again, we find that this part of the heart is represented as occupying, to a great extent, the right side of the chest. Now, in M. Groux, we find that the right margin of the heart does not reach the right margin of the sternum.

Another remarkable phenomenon in M. Groux's case is the power he has of forcing the lung through the fissure during expiration. Two theories in reference to certain diseases of the lungs have lately excited some discussion under the terms expiratory and inspiratory theories. The former, advanced by

Laennec, has recently received new support from Dr. Jenner, who, in a paper in the *Medico-Chirurgical Transactions*, points out that the muscles, during *expiration*, force air from one part of the lungs into another, especially the anterior margin of the lungs, where emphysema is known to be of most common occurrence. On the other hand, this morbid condition has been supposed to depend more immediately on inspiration by some writers. In a case of emphysema, however, which occurred in my wards in the Infirmary, and in which the chest was punctured by Mr. Syme, pus was forced out during expiration, an observation which has been frequently made by others, but which I was then strongly impressed with. In the case of M. Groux, it will be seen that, during expiration and cough, the right lung is forcibly protruded through the fissure. If no fissure had existed, it may be said, probably the lung here would not be forced out in the way it is; but, as the lung is not forced out during inspiration, it must be clear that greater pressure is exercised upon it during expiration than during inspiration, although, perhaps, it might be naturally enough supposed that, during the latter act, it should become more voluminous. I believe, therefore, that, in the constant efforts of coughing and in prolonged expiration, the static pressure of the atmosphere is far greater on the air-cells during expiration than during inspiration; and if so, must be, as Dr. Jenner thinks, a principal, if not the sole cause of emphysema.

Professor Simpson observed, in the first place, that the division of the sternum was not entirely central; for it was, especially at the apex, broader on the left side; and hence the upper margin of the right lung only projected into the vacancy on forced expiration. Besides, both sterno-cleido-mastoids were inserted into the left side of the upper edge of the sternum. It was doubtful if, within, there was not some corresponding displacement of the anterior mediastinum from its middle position. In the second place, he asked if, while watching the change upwards during prolonged expiration in the pulsations marking the site of the apex of the heart, a corresponding dulness rose upwards with the elevation of the pulsation. If so, it was a very certain sign that the apex and ventricles rose upwards during forced expiration. (M. Groux explained that the increased height of the pulsation had been found to be accompanied with a corresponding increased dulness on percussion.) He thought one of the most interesting points in reference to the case, was the very marked movement of the apex and ventricular part of the heart upwards from the fifth to the second intercostal space on the action of the lungs being prevented, for the time being, by a prolonged expiration. He had heard Dr. Saunders make some observations regarding this matter. During forced and prolonged expiration, the flow of blood through the lungs or pulmonary artery was so far temporarily arrested; and he (Dr. Simpson) believed that this peculiar movement of the apex upwards, for a space corresponding to three ribs, was occasioned by the distension of the right auricle and ventricle from the continuous and cumulative flow of blood into them from the two venæ cavæ, and the recoil against this distending, and, as it were, resistent, current, produced by the muscular contraction of the right auricle and ventricle; the distension and reaction thus produced, tending to thrust or move the apex and movable part of the heart upwards from its usual position. If this movement, however, did not occur to any extent in other and healthy individuals under similar circumstances, he was inclined to consider that there was a great probability of some abnormal conformation of the mediastinum giving rise to it in the present instance."—*Edin. Med. Journal*, March, 1858.

MATERIA MEDICA AND PHARMACY.

4. *Medicinal Action of Lupuline.*—The *Edinburgh Medical Journal* for February last, contains an interesting paper on this subject by Mr. Walter Jauncey. Lupuline, in which resides the virtue of the hop, is the yellow powder at the

base of the scales. It loses activity by exposure to air; its colour changes, and its efficacy is impaired by exposure to light.

The most important constituent, Mr. J. says, appears to be a volatile oil, which is partially soluble in water and very soluble in alcohol and ether. The oil of hop, Mr. J. feels confident, is formed during the process of drying, as he failed to obtain it from the ripe undried hop; and a tincture of the undried hop, though decidedly bitter, lacks the aromatic flavour found in the tincture of the dried lupuline. For investigating this point, Mr. J. was obliged to use the entire hop, in consequence of the impossibility of separating the lupuline from the scales of the undried hop. In making the tincture, however, he used the undried hop, in the proportion of six to one of the lupuline. The oil, by keeping, he states, becomes resinified, and the resin is of a yellowish colour, different from that of the oil, when freshly distilled.

From the observations he has made on the action of the oil, Mr. J. concludes that it is sedative and anodyne. It relieves pain without necessarily producing sleep. "Large doses of lupuline," says Mr. J., "reduce the frequency of the pulse from 20 to 30 beats in a minute (and Dr. Maton lowered the pulse even 36 beats in the minute), and finally bring on pain in the head, nausea, and loss of appetite. These effects are produced by the oil, whether inhaled or swallowed. In full doses it acts also somewhat as a diuretic; and I have seen good evidence of its power in diminishing and allaying the venereal appetite. On one occasion I took repeated doses of the lupuline for six hours, 10 grains every half hour, or 120 grains in all, when the pulse became lower by 30 beats in the minute, and intermittent. This was accompanied by such an uncomfortable sensation of faintness, that I did not carry the experiment farther. I made the trial with every care, at a period when I was free from disturbance. On another day, about 2 P. M., I inclosed myself in a room, while lupuline was being distilled in an open retort. The peculiar smell of the oil soon pervaded the room. My pulse was then 84, and I felt quite well and comfortable; in half an hour my pulse was reduced 15 beats, and I had a violent pain in the head. I continued the inhalation another half hour, when the pulse had fallen to 60, and was occasionally intermittent, the headache became insupportable, and I felt an inclination to vomit. I discontinued the inhalation, the pulse becoming regular, and of its usual rapidity, in about twenty minutes. The headache and nausea continued for nearly two hours. I afterwards passed a considerable quantity of clear urine, the reaction of which was acid, and s. g. 1026, while that passed previously the same day, and that on the following day, was respectively 1019 and 1020. I could not, however, detect the smell of the oil either in the urine or the skin.

"A man, employed in the operation of bagging or treading the dried hops into the pockets, told me that occasionally the smell of the hops made him so faint that he was obliged to go into the open air. He described his feelings as a faintness and dizziness: and seeing him on one of those occasions, I found his pulse slow and intermittent; and it is worth notice, that I have not heard of these effects being produced on those who are employed gathering the green hop in the hop-gardens. Besides the volatile oil, tannin and extractive matter, lupuline contains a principle to which the name Humuline or Lupulite has been given; some writers have thought this to be the active ingredient of the hop, but I have never been able to satisfy myself that it possesses any sedative power. Its effects on the digestive organs are somewhat tonic. I have never observed from the humuline any of the symptoms produced by the oil. I have found much difficulty in obtaining sufficient humuline to make prolonged experiments; and my observations were made principally after the administration of lupuline, which had been deprived of its oil by distillation. I have never observed the effects of the oil produced. One day I took a strong decoction of lupuline, from which the oil had been distilled, and evaporated it. While this was progressing, I held my nostrils over the steam for half an hour. The smell was very different from that of the oil, being more pleasant, somewhat resembling that which is noticed in brewing. I observed no particular effect; certain it is that no nausea was produced. I have not succeeded in producing fatal effects on any of the lower animals by large doses, either of the oil or lupuline in substance. I administered as much as five drops of the former to a small terrier. I have, however, been told that a drove of ducks, a year or two ago, ate a large quantity of lupuline which had been swept from a hop-room into a poultry-yard, and that several of them died in consequence. It is also said, on hop farms, the lupuline has the property of making cows cast their calves, but I have never seen any parturient action from it on the human uterus.

"With regard to the diseases in which lupuline may be given, I have prescribed it in a variety of cases with varying effects. It will be sufficient to give the general results of the cases and not each one in detail. In diseases of the digestive organs, I have found it most useful in cases occurring in spirit drinkers, when there is tremulous tongue, loss of appetite, and excited manner. In pyrosis, it may advantageously be combined with bismuth, and in the dyspepsia of oxaluria, with the mineral acids. In some mild cases of gastralgia, it may be substituted with advantage for hydrocyanic acid. I have given it in several cases of articular rheumatism, without benefit, although Dr. Maton found its use beneficial in that disease. Three of five patients with sciatica, expressed themselves relieved. In two cases of pleuritis it made no difference to the pain. In disorders of the nervous system, I have found its influence marked. One patient (in a private lunatic asylum), occasionally having epileptic seizures, and being in a highly nervous and excited state, begged for a dose of it nightly, after having once experienced its effects, as keeping away a 'dreadful sensation,' which prevented his sleeping, and was accompanied by incoherent muttering, of which the patient was himself unconscious. Two young ladies were seized with such pain as to cause them to scream loudly every few minutes. Dr. Evans, of Birmingham, who saw the patients in consultation, diagnosed the pain, which was seated in the abdomen, as hysterical; and after opium, morphia, camphor, and hyoscyamus had failed, and chloroform inhaled, had only afforded partial benefit, prescribed lupuline, with positive and speedy relief to the symptoms.

"A man, æt. 49, a brassfounder, had suffered for two years from gradually increasing pain and tenderness on left side of spinal column. When the pain was most acute, morphia internally gave but little relief, as also did the actual cautery applied over the spine, but he experienced decided benefit from repeated ten-grain doses of lupuline. A few weeks after, I heard that paralysis of the right leg had come on.

"An elderly lady, the wife of a surgeon, was suffering from neuralgic pain in the back, of distressing severity of many days' continuance. She took henbane and tonics, used aconite and chloroform internally, without effect. Two or three doses of lupuline relieved her permanently. Four cases of chorea were not affected by its use. Lupuline, prescribed by Dr. Heslop, of Birmingham, for a lady with melancholia and loss of sleep, and in a similar case under Mr. Dufton, of Birmingham, had in both cases a decidedly satisfactory effect. Two cases of nymphomania seemed improved by its use; but as the patients were nearly idiotic, they were not very satisfactory subjects for observation. In some affections of the urino-genital organs, I can corroborate the favourable expressions of Zambaco and Hertsfelder. In five cases of slight spermatorrhœa and troublesome erections, it was of much service. One gentleman, who, though married and having children, was much troubled by nocturnal emissions, was free for many nights while taking lupuline. At the same time, I must in fairness state, that Mr. L. Parker found it useless in a case in which he prescribed it. In several cases of painful erections in gonorrhœa, I have seen it serviceable; and it, as was likewise observed in two cases of very chronic gleet, seemed to possess the power of abating the discharge; but, in two cases of chordee, where there was decided curvature during erection, it proved useless. Dr. Heslop prescribed it nightly for a boy aged eight, who had had nocturnal enuresis since birth, and was admitted into the Queen's Hospital for modified variola, and after a week the disease was removed entirely.

"Lupuline often removes the pain in back and chest accompanying simple leucorrhœa. I have also found it useful in one or two cases of ulceration of the os. It almost invariably relieves the pains in carcinoma uteri. I have found it do so in eleven cases, and in one of carcinomatous rectum; as also have Dr. Paterson, of Tivertan, in one case affecting the breast; Mr. Kite, of West Bromwich, in a similar case; and Dr. Bell Fletcher, of Birmingham, in several cases of cancer. In two cases of abortion, where the fœtus had been expelled, the separation of the placenta was not accelerated by its administration, though in each case this was speedily accomplished by a dose of ergot of rye. Lupuline completely relieved irritability of the bladder in two elderly females."

The following are the conclusions at which Mr. J. has arrived with regard to the lupuline.

"1st. That it contains two distinct and different principles.

"2d. That one of these, the oil, is a pure sedative and anodyne.

"3d. That the other, which is probably humuline, has merely a tonic effect on the digestive organs.

"4th. That the lupuline in substance may be given in very large doses, ten grains every half hour, without producing dangerous effects.

"5th. That the principal advantage it possesses over other anodynes in relieving the diseases above mentioned is, that, instead of diminishing the digestive power, it rather increases it. I would also remark, that its effects vary on different individuals, some requiring larger and more frequent doses than others, to produce the same results. In some the lupuline seems to lose its power after repeated administration."

Mr. J. has used the lupuline in substance, and in tincture, and has tried a watery extract of lupuline, but found it inert, owing probably to the dissipation of the oil in the process of evaporation.

The tincture of lupuline employed by Mr. J. is of the proportion of one ounce and six drachms to half a pint of proof spirit. The ordinary dose he employed was one drachm, and the tincture is best made by percolation. If it is made by maceration, and the process continued long, or if the lupuline be old, the tincture becomes milky.

In general, he prefers giving the lupuline in substance, by placing ten grains on the tongue, and washing down with a little water; and this dose may be repeated every three or four hours if required, or the lupuline may be made into pills by manipulating it in a warm mortar.

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5. *Chloroform as a Narcotic.*—Chloroform has lately been much employed at King's College Hospital to procure sleep in those cases where opium is contraindicated or fails to act. It is administered in doses of thirty or forty minims, suspended in a little acacia mixture, or some other mucilaginous fluid, and, given at night, generally succeeds in procuring for the patient two or three hours of tranquil sleep. In this way it has been used very successfully in cases of old bronchitis attended with profuse secretion; and in hemicrania, or other painful nervous affections, where opiates have lost all power of alleviating the patient's misery, the use of chloroform internally, in the doses above mentioned, has been attended with great and immediate relief, which allows the patient to obtain that repose of which he stands so much in need.—*British Med. Journ.*, April 24, 1858.

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6. *Therapeutical Properties of Larch Bark.*—Dr. Moore read a communication before the Assoc. of the Fellows and Licentiates of the King and Queen's Coll. Phys., Ireland, April 7, 1858, on the larch bark, recently introduced to the profession by Dr. Chas. Frizell.

Dr. G. A. Kennedy, Physician to the Cork Street Fever Hospital, found the extract of larch bark, in doses of three grains every fourth hour, very efficacious in arresting epistaxis and intestinal hemorrhage, in a young man aged 18 years, labouring under typhus fever; the hemorrhage in this case was gradually, but effectually, arrested in thirty-six hours. He also prescribed it, with much benefit, in cases of bronchitis, with profuse expectoration setting in during convalescence from fever; in such cases he gave it in three grain doses every third or fourth hour.

Dr. Hugh Carmichael, of Dublin (who was the first to advocate the employment of turpentine in iritis), treated a case of bronchitis, with bloody sputa, which occurred in a young lady aged 13 years, with extract of larch bark, gr. 3, ipecacuanha gr. ⅓, three times daily; this treatment had the best effect in diminishing the bronchial super-secretion, in checking the hæmoptysis, and imparting general tone to the system. A case somewhat analogous to the last was treated by Dr. Moore, Physician to the Institution for Diseases of Children, with 2½ grain doses of the extract of larch bark every fourth hour, counter-irritation, with liniment. crotonis, being used at the same time. This patient, a young man, aged 17 years, had a cough of six weeks' standing, with profuse expectoration streaked with blood; in ten days he was sensibly benefited, and continued to amend steadily. The first effect of the extract in this case was to stimulate very sensibly the urinary secretions. The tincture of the larch bark is of a dark carmine colour, has an agreeable "pinic" smell; in taste it partakes of the oleo-resins, is styptic and carminative; it is one, if not the most elegant form at our disposal of prescribing a terebinthinate, either as an addition to a compatible expectorant or other fluid mixture, or to be given "per se." From the experience of those who have tried it, it is conclusive that the larch bark is a stimulating, slightly styptic, expectorant, with a direct tendency to the mucous membranes in general, and, in the first instance, to the genito-urinary in particular, consequently its use is equally indicated in fluxes from the urethra or bladder. The dose of the extract is from gr. j to v; of the tincture, from ʒss to ʒiij.—*Dublin Hosp. Gaz.*, April 15, 1858.

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7. *New Preparation of Bark—Quinium* (the alcoholic extract with lime of M. A. Labarraque, of Havre).—The objects of the investigations of MM. Delondre and A. Labarraque, which have led to the adoption of the above preparation, were—

1. To find a preparation admitting of the use of all the cinchonas which contain, at the same time, quina and cinchonia in considerable proportion, and these are the most numerous. M. Soubeiran, in his course of pharmacology, observes that the association of cinchonia with quina presents, in many cases, important advantages, and that the two febrifuge bases are complementary to one another, in a therapeutic point of view.

2. To obtain uniformity in the product by an easy and strict proportionment of the febrifuge alkaloids, thus practically applying, in the most useful manner, the discovery of Pelletier and Cavantou.

3. To preserve all the useful products of the cinchonas by removing only the inert matters which interfere with the easy absorption of the active principles and oppress the digestive organs.

4. To establish a proportion of quina and cinchonia, similar to that found in the cinchona, which the experience of all ages has shown to be the most efficacious, the bright red cinchona, which is at present scarcely employed, on account of its very high price.

5. To simplify operations, so that nothing may be lost, and so as to afford the best febrifuge at the lowest possible price.

The question of price is, in fact, very important in dealing with a dear medicine, the use of which ought to be continued, and which is most frequently necessary for the poorest country labourers.

The following is M. Labarraque's formula, as it has been adopted by the Académie de Médecine, and entered in their Bulletin.

Formula for the alcoholic extract of cinchona by means of lime.—Take cinchona barks of known composition; mix them in such quantities that the quina may be present, relatively to the cinchonia, in the proportion of two parts of the former to one of the latter.

Pound the barks; mix the powder with half its weight of slaked lime; heat the mixed powder with boiling alcohol until the barks are exhausted; collect the greater part of the alcohol by distillation; complete the evaporation. The residue is the alcoholic extract of cinchona by means of lime.

Seventy grains of this extract ought to yield, by the ordinary processes, fifteen and a half grains of sulphate of quina, and nearly eight grains of sulphate of cinchonia.

Pills of Quinium.—Two and a half grains of quinium in a pill represent one-third of their weight of febrifuge alkaloid. Thirty of these pills, which are sold for about fifteen pence, suffice, in the majority of cases, for the cure of an intermittent fever; from five to ten are given in the twenty-four hours, as far as possible from the approaching paroxysm. Half a glass of wine is taken after each dose.

Wine of Quinium.—This wine, which may be of great use as a tonic, as a febrifuge, and in preventing the return of obstinate intermittent fevers, is prepared by M. A. Labarraque by dissolving seventy grains of quinium in twelve times its weight of alcohol, adding thirty-five ounces of good white wine, and filtering. The wine contains about twenty-three grains of the alkaloid in thirty-two ounces; the dose is from an ounce and a half to three ounces as a tonic, and from three to six ounces as a febrifuge.

The following are M. Bouchardat's observations in his *Traité de Thérapeutique et de Matière Médicale,* on the comparative advantages of the sulphate of quina and quinium:—

"Whenever it is necessary to cut short a paroxysm surely and quickly, sulphate of quina will always have the superiority over all the other preparations of cinchona; none of them, not quinium itself, can be compared to it for this marvellous power. For this reason no substitute is to be found for it when we have to deal with essential paroxysms. But when it is our object to cure a fever of long standing, surely and without shocks to the system, quinium resumes its supremacy.

"In treating intermittent fevers in a hospital, or in a healthy locality remote from the foci in which these fevers have originated, the expectant system alone (as M. Chomel had so well established for the hospitals in Paris, and as M. Lavern has verified in those of Blidah) suffices in the great majority of cases; sulphate of quina is, under these circumstances, the most valuable adjuvant; it still shows in these special instances its incontestable superiority in quickly and effectually relieving the patients from the intermittent fevers which tormented them.

"But it is when the patients remain in the localities, and under the conditions in which they have been attacked by the fever, that the remedy which subdues the disease without disturbing the system in its turn resumes its superiority.

"It is in fever countries, in the midst of the causes which have given birth to the fevers, when these same causes persist, that all the advantages of quinium appear. Under such circumstances, M. Vahu has administered it in Algiers, M. Hudellet in Dombes, and I myself in several fever localities in the department of l'Yonne."

To this first testimony borne by M. Bouchardat, we hope soon to add further information on the subject. Quinium is being largely tried in the cliniques of M. Trousseau, at the Hôtel Dieu, and of M. Aran, at the Hôpital Saint Antoine, and these experiments will furnish the opportunity of returning to this important question.—*Dublin Quarterly Journ. of Med. Sci.*, Feb., 1858, from *Bull. Gén. de Thérap.*, Nov., 1857.

8. *Syrup of Protocarbonate of Iron.*—The facility with which protocarbonate of iron dissolves in organic acids, and its perfect harmlessness in irritable subjects, render it one of the most valuable agents in therapeutics; accordingly, all the new preparations into which sugar has been introduced, for the purpose of giving stability to this saline compound, have been adopted in practice.

M. Dannecy, a distinguished pharmacien in Bordeaux, having ascertained that the precipitate of protocarbonate of iron, obtained by mixing sweetened and boiled solutions of carbonate of soda and of protosulphate of iron, possesses the singular property of dissolving in simple syrup without becoming coloured, conceived the idea of thus preparing a new ferruginous syrup.

This preparation, being permanent, will be employed in cases in which the form of syrup is preferable to that of pills; for example, in the treatment of children.

The following is the process for making M. Dannecy's new preparation:

Take of purified protosulphate of iron, two ounces; distilled water, sixteen ounces; white sugar, two ounces; dissolve with ebullition, and filter. Secondly, take of crystallized carbonate of soda two and a half ounces; distilled water, sixteen ounces; white sugar, two ounces; dissolve with ebullition, and filter. When the two solutions have cooled, mix them in a glass vessel and shake for a moment; a precipitate is formed, which is at first white, but soon becomes of a greenish-gray colour, preserving this shade. Allow this precipitate to collect during twenty-four hours; decant. Afterwards, take a solution of sugar in the following proportions: white sugar, two and a half ounces; distilled water, ten ounces; dissolve with ebullition, and filter. Add the precipitate to this saccharine fluid when cold; set it aside to rest; decant. Repeat this process once more, in order to remove the sulphate of soda resulting from the double decomposition. This washing ought to be accomplished as quickly as possible to prevent the unnecessary solution of the ferruginous precipitate. Subsequently, agitate this precipitate from time to time in a fresh portion of saccharine solution (water, ten ounces; sugar, two and a half ounces). It will dissolve in the course of some days. Lastly, take of white sugar thirty-eight and a half ounces; distilled water, nineteen ounces; add the saccharine ferruginous solution, and boil to specific gravity 1.262, at the temperature of ebullition; flavour with tincture of lemon or orange. The product will be sixty-four ounces of almost colourless and perfectly clear syrup of protocarbonate of iron, containing 9.90 per cent. of oxide of iron.—*Dublin Hospital Gazette*, March 1, 1858, from *Bull. Gén. de Thérap.*, 15 Feb., 1858.

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9. *Iodide of Lime.*—This preparation, made with one part of iodine and seven of lime, is recommended by Dr. Pidduck as superior to the iodide of potassium in the comparative smallness of its dose, in its ready combination with the blood and tissues, manifested by its alterative effects, in not passing so quickly through the kidneys, in not producing gastro-enteric and vesical irritation, and in being nearly tasteless. Dr. Pidduck uses a solution of one drachm (containing eight and a half grains of iodine) in a pint of boiling water, which, when cold and filtered, is colourless and transparent. The iodine is found to exist in the solution in the form of iodide of calcium and iodate of lime.—*Pharmaceutical Journal*, Feb., 1858.

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10. *Formula for Compound Sulphur Ointment.*—The following is the formula for the compound sulphur ointment successfully employed by Messrs. Startin and McWhinnie, at the Hospital for Diseases of the Skin, against scabies, favus, and true ringworm, diseases which depend upon parasites which it is necessary to kill.

℞.—Of sublimed sulphur half a pound, of the ammonio-chloride of mercury half an ounce, and of the sulphuret of mercury half an ounce; to these, well rubbed together, add four ounces of olive oil, sixteen ounces of fresh lard, and twenty minims of creasote. It will be seen that we have here in combination three different drugs, each possessing great efficiency in the destruction of insect and fungus life. The object in view, that of obtaining a vigorous compound, which, at the same time, shall not be irritating to the skin, is, we believe, exceedingly well attained.—*Med. Times and Gaz.*, May 15, 1858.

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11. *Formula for the Preparation of Anti-Asthmatic Cigarettes.* By M. Dannecy, Pharmacien, of Bordeaux.—Some of the properties of stramonium and belladonna, which plants, when smoked, justly enjoy the reputation of relieving asthma, and which are employed with the most undoubted success in the treatment of neuralgia, exist also in plants abounding in nitrates. Thus I have seen patients who had experienced great relief from the use of the leaves of borage and pellitory—plants containing, as is well known, much nitrate of lime.

The fault which almost all patients find with narcotic plants, smoked in pipes or in the form of cigarettes, is a copious production of smoke, which fatigues them, and sometimes excites cough—a symptom they are, on the contrary, employed to allay.

In order to obviate this inconvenience, I have added nitre to the leaves of belladonna and of stramonium, by watering these plants, dried and conveniently spread out, with a solution of nitrate of potash, in the proportion of three ounces of the salt to rather more than two pounds avoirdupois of the plants. It will be easily understood that, as this solution penetrates the entire vegetable tissue, the latter will, when dry, burn completely, without the formation of the pyrogeneous products above alluded to.

I have for many years prepared cigarettes according to this formula, and the benefit derived from their use by a great number of patients induces me to publish it, and to call the attention of practitioners to this mode of treatment, consisting in the smoking of narcotic plants combined with nitre.—*Dublin Hosp. Gaz.*, March 1, 1858.

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12. *Chemistry of Caustics.*—Mr. Wm. Bastick states that "caustics, with reference to their action, may be divided into two great classes, namely, one which comprises those which merely kill or destroy the vitality of the living tissue; and the other, which includes those which not only destroy the vitality of the living tissue, but decompose or dissolve the tissue whether dead or living.

"As examples of the former class, may be enumerated chloride of zinc, sulphates of copper and zinc, bichloride of mercury, etc.; and as examples of the latter class, may be mentioned caustic potash, nitrate of silver, manganese cum potassâ, chromic acid, etc.

"Another distinctive feature of these two classes is, that while the latter destroys and decomposes the living or dead tissue, the former, having killed the living tissue, acts afterwards as a powerful antiseptic or preservative of it.

"It is not within my province," remarks Mr. B., "to point out to those extensively employing caustics, to whom these facts may be new, the importance of bearing in mind this distinctive feature between the two classes of caustics, when selecting the description of caustic to be employed in any given case.

"Although caustics may be conveniently divided in the manner described into two principal classes, these classes can be further subdivided into many others, because the mode of action is frequently distinct in each individual case, whatever the final result may be on the living tissue.

"To illustrate this point, the modes of action of caustic, potash, and chromic acid may be cited. When the living tissue is placed in contact with caustic potash, the destruction of its vitality ensues by the potash dissolving its albuminous and fibrinous components. In fact, acting in the manner described by chemists for obtaining the various protein substances from organic matter. Of course I only allude to the leading features of the action of caustics in this instance as well as in others. When the same tissue is treated, chromic acid, instead of obtaining a solution of the protein compounds of the tissue, and thus destroying its organized structure, the tissue is destroyed by a slow process of combustion; or, in other words, it is oxidized at the expense of the oxygen of chromic acid, by reason of the facility with which that acid parts with its abundant oxygen when in contact with organic bodies. The manganese with potash acts in a similar way as a caustic to chromic acid, but in consequence of the permanganic and manganic acids which it contains being in combination with the base potash, its action is more controllable and persistent. It may be not here out of place to mention what appears to me to be a practical advantage that the destructive caustics, if I may so term them, possess over the conservative ones. In doing so I beg to state, once for all, that I offer my opinions on such points with great diffidence, knowing that chemistry is not medicine or surgery, but only one of their instruments. The practical advantage is this: When the surgeon desires the removal of a diseased tissue by caustics, if he uses a conservative caustic he kills the tissue, but has to effect its separation by a further process of suppuration, etc., whereas if he employs a destructive caustic, the two processes are in simultaneous action, and the desired result is consequently more speedily accomplished.

"Nitrate of silver is essentially an oxidizing caustic, but its action is much slower than that of chromic acid or manganese with potassa, from the circumstances that its does not so readily part with its oxygen, and it forms an insoluble compound with organic structures which acts as a preventive to its continuous powers as a caustic, by forming a sort of impermeable coating on the tissue to be removed. I am aware that this action is an advantage where hemorrhage is to be feared.

"The exsiccated sulphate of zinc and copper, when employed as caustics, act like chloride of zinc by their powerful affinity for water. But when the vis vitæ is destroyed by such affinity, their further action is that of strong antiseptics, thereby greatly, if not entirely, retarding the natural disruption of tissues which have ceased to possess vitality. Bichloride of mercury, and in fact, all mercurial caustics possess a conservative action by their strong affinity for the albuminous components of organic structures with which they form compounds of definite character.

"Nitric and sulphuric acids belong to the class of destructive caustics; the action of the former is that of the oxidation of the tissues, while the latter owes its power as a caustic to its power of extracting the elements of water from organized bodies, behaving like the exsiccated salts previously mentioned, with which it is sometimes judiciously combined to prevent the spreading of the acid beyond the parts to be destroyed by reason of its fluidity when uncombined.

"Chloride of gold has been extensively employed generally in combination with other caustics in some of the continental hospitals. When placed in contact with organic matter, this salt is reduced to a metallic state similar to the action of nitrate of silver; but as far as my experience goes, it is inferior as a caustic to the silver salt, because of the large quantity of oxidizing material which is set free when the organic matter is treated with nitrate of silver. Among the conservative caustics, arsenic and its compounds will find its proper class; for although arsenic is poisonous to living tissue, it is a powerful antiseptic agent. It forms no combinations with dead or living tissue, and only a feeble one with albuminous matter; and from this cause it must be regarded in a chemical point of view as a very inefficient caustic.

"Chlorides of antimony and iron, which have been used as caustics, exhibit a mode of action similar to chloride of zinc. The very feeble action of the latter must in some cases be its principal recommendation.

"It will be evident from the previous statements that chemistry will supply us with an indefinite number of caustics; for it is clear that whatever decomposes or combines with living tissue sufficiently to kill, it is, to all intents and purposes, a caustic. It is also equally manifest that, while it is the essential condition of every substance professing to be a caustic, it should kill the living tissue, it by no means follows that all caustics performing this condition should destroy or dissolve away, as it were, the tissue when no longer possessing life, for this latter property belongs to a distinct class of caustics."—*Med. Times and Gaz.*, April 10, 1858.

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13. *New Caustic Pencil, modifying the tissues in different degrees. Double Salt of Nitrate of Silver and of Soda.*—M. Brun, in the *Gazette Médicale de Lyon*, proposes the use of the above double salt in varying proportions, in order to obtain the modifying, in contradistinction to the caustic or destructive, effects of nitrate of silver upon the tissues in cases in which it is necessary to confine this action to a circumscribed point, as, for example, in chronic inflammation of the urethra, where the disease is localized, as in irritations of the prostatic region, in spermatorrhœa, neuralgia of the neck of the bladder, &c., in which injections would irritate the surrounding sound parts, and consequently dispose to an extension of the evil. For this purpose, he has had pencils prepared of nitrate of soda and nitrate of silver, in varying proportions.

The following is the process adopted by M. Livernay, pharmacien, in the manufacture of the pencils: Dissolve, on the one hand, a portion of nitrate of silver in a sufficient quantity of distilled water; on the other, a portion of nitrate of soda in a like quantity of water; mix these two solutions, and evaporate them to dryness. Place the residue in a capsule, and heat until it be fused; then pour the product into the mould, previously warmed and greased. When cold, a cylinder is obtained, representing a double salt of nitrate of silver and of soda.

This double salt is of a pearly-gray colour, if each of the salts employed was pure; it acquires a brown and blackish tint if the fusion was too long continued, whether in consequence of the reduction of a small quantity of silver, or of the action of the fatty matter with which the mould was smeared.

The nitrate of silver and soda presents a crystalline and radiated fracture. It is very soluble in water and in boiling water. It is not more brittle than nitrate of silver, and it is more easily cast. Generally speaking, it presents the same characters.

These two salts may be combined in the most varied proportions.

M. Brun has used this double salt with much advantage for touching aphthæ of the mouth, for smearing the glans in cases of balanitis, and for applying to a localized inflammation of the lower eyelid. He sums up its advantages in the following propositions:—

1. It better fulfils the object of the practitioner where only a modification of the tissues is desired.
2. Its action may be increased or diminished by varying the relative proportion of the two component salts.
3. It is more easily manipulated.
4. In no case is its use attended with danger.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

14. *Contribution to the Etiology of Continued Fever; or an Investigation of the Various Causes which Influence the Prevalence and Mortality of its Different Forms.*—This is the title of a paper read before the Royal Medical and Chirurgical Society by Dr. Murchison. The materials consisted principally of an analysis of 6628 cases of continued fever which had been admitted into the London Fever Hospital in the ten years during which the distinctions had been recorded between typhus, typhoid, relapsing fever, and febricula. The results thus arrived at were compared with the statistical data which the author had obtained from many of the principal hospitals in England, Scotland, and Ireland, and from various published records. The following are the conclusions of the author:—

1. Typhus and relapsing fever occur at irregular intervals, and often simultaneously, as wide spread epidemics. They then gradually disappear, and both of them, but especially the latter, may be absent for years from those places where, during the epidemics, they are usually the most prevalent.
2. Typhoid fever does not occur in such wide-spread epidemics. In certain places it is never absent, and its prevalence varies but little from year to year. When outbreaks of it occur in other situations, these are always of the most local and circumscribed character.
3. Typhus and relapsing fever are quite independent of the season of the year, whereas typhoid fever is almost invariably most prevalent during the autumn, and it has been observed to be especially prevalent in seasons remarkable for their high temperature.
4. Sex has no influence over the prevalence of continued fever, nor over that of any of its forms.
5. Typhoid fever is pre-eminently a disease of childhood and adolescence, at which periods of life we know that there is a marked proneness to enteric affections. Less than one-seventh of the cases of typhoid fever are above 30 years of age. Typhus and relapsing fever exhibit no such predilection for youth. Of typhus one-half, and of relapsing fever one-third, of the cases are above 30.

6. Typhus and relapsing fever are the appanage of poverty and destitution, and seldom or never occur amongst the wealthy, except from direct contagion. Typhoid fever attacks both poor and rich without distinction.

7. In large cities, typhus and relapsing fever are, for the most part, limited to those localities remarkable for the overcrowding of their inhabitants; and in country districts they are seldom or never met with, except when directly imported. Typhoid, on the other hand, occurs alike in the centre and suburbs of cities, in the crowded hovels of the poor, and in the spacious mansions of the rich, and also in isolated houses and hamlets in the country, without any traceable sources of contagion.

8. When fever breaks out in a house or locality, it seldom or never happens that some of the cases are typhus and others typhoid; but typhus and relapsing fever occur not unfrequently together.

9. Cases of what has been called "febricula" may co-exist along with any of the three other forms, but especially with typhus and relapsing fever. Most of them are either mild varieties of some of these, or dependent upon some derangement of digestion, or other non-specific causes.

10. Overcrowding and destitution appear to be the essential causes of typhus and relapsing fever, and to be capable of generating them *de novo;* while there is no evidence that they have any such influence over the production of typhoid fever.

11. There are many circumstances which tend to the belief that the emanations from decaying organic matter, or organic impurities in drinking water, or both of these causes combined, are capable of generating typhoid fever; but there is no authenticated evidence whatever to prove that such causes can give rise to typhus or relapsing fever.

12. There are some grounds for believing that a combination of the causes mentioned in the last two paragraphs may occasionally, although very rarely, generate a disease intermediate in its character between typhus and typhoid, or may (to speak perhaps more correctly) cause typhoid fever to assume some of the characters of typhus; but such cases cannot be used as an argument in favour of the identity of the poisons of the two diseases, for, first, instances are not wanting of two of the exanthemata co-existing in the same individual; and secondly, if a known poison generates one train of symptoms, and a second poison another, a combination of the two poisons will generate a combination of the two trains of symptoms, without its being warrantable to conclude that the poisons in the first two instances were identical.

13. Typhus is eminently contagious. Typhoid fever is also contagious, but in a more limited degree, and possibly through a different medium. Again, typhus has in no instance been proved to communicate typhoid, nor typhoid to communicate typhus. An attack of either confers an immunity from future attacks of itself, but not of the other.

14. Recency of residence increases the liability to typhoid: scarcely, if at all, that to typhus.

15. The great majority of the cases of relapsing fever have been Irish, and of these a large proportion had but recently arrived in London. There seems reason for believing that fever imported from Ireland as "relapsing" may gradually pass into typhus.

16. Relapsing fever offers a marked contrast to typhus and typhoid in the small mortality which it occasions.

17. In comparing the mortality from continued fever at different times and places, it is essential to take into consideration the form of fever which has prevailed. If this be not done, the comparison is valueless.

18. The small mortality from continued fever constantly observed in Ireland, along with other circumstances, renders it probable that in that country a fever more or less allied to the relapsing, or to febricula, is more common than in Britain.

19. Season of the year has no influence over the mortality of any of the forms of fever.

20. In all of the fevers there is not much difference in the mortality of the two sexes.

21. Typhus is least fatal between the ages of ten and twenty, the mortality at that period of life being under 5 per cent. Above twenty, the mortality increases with the age, until, of those above fifty, considerably more than one-half die. The mortality from relapsing fever appears to be influenced by age in a similar manner. In typhoid fever, on the other hand, in no period of life is the mortality under 12¼ per cent.; and although, as in typhus, the rate of mortality increases with the age, it does so in a less degree.

22. The mortality from typhus is greater among the very poor than among those in better circumstances. Typhoid fever is equally mortal in all classes.

23. Recency of residence increases the mortality from, as well as the liability to, typhoid fever, but has no such influence over typhus.

24. Typhus and relapsing fever are strongly assimilated in the causes which give rise to them, if the specific poison of the two be not actually the same. Typhoid fever, on the contrary, appears to be a perfectly distinct affection, dependent upon totally different causes.

25. The facts which have been adduced in reference to the mode of origin of the different forms of fever deserve the serious attention of those intrusted with the care of the public health, for it is manifest that, should they be confirmed by subsequent observation, they must have an important bearing on the subject of hygiene.—*Med. Times and Gaz.*, May 8, 1858.

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15. *Is Intestinal Hemorrhage Diagnostic of Typhus or Typhoid Fevers?*—In an interesting paper read before the King's and Queen's College of Physicians of Ireland (January 7, 1857), by Dr. HENRY KENNEDY, the author relates a case of typhoid fever in which blood was poured out in very large quantities from the lower part of the jejunum and upper part of the ileum, without any abrasion; and he presents the following conclusions:—

"1. That intestinal hemorrhage is common to fevers of both the typhus and typhoid type.

"2. That it would appear to be more common in typhus and common fevers than in typhoid fever.

"3. That the blood may, beyond dispute, be exuded from the mucous membrane, independent of ulceration.

"4. That a hemorrhage sufficient to cause death may take place from the mucous membrane of the small intestine, and may be, in the strictest sense, an internal hemorrhage, the blood not leaving the part on which it was poured out.

"5. That the recovery of patients after intestinal hemorrhage is, in general, too rapid to allow us to suppose that it was the result of ulcerated intestine.

"6. That as a corollary from these several points, intestinal hemorrhage may afford us an additional diagnostic mark between typhus and typhoid fevers."—*Dub. Quart. Journ. of Med. Sci.*, August, 1857.

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16. *Yellow Fever Epidemic of* 1856, *at New Castle, Jamaica.*—Dr. LAWSON, Deputy Inspector of Hospitals, communicated an elaborate paper on this subject to the Army Medical and Surgical Society (Feb. 6, 1858). The paper was amply illustrated by cases, tables, a plan-drawing of the mountain ridges on which Newcastle stands, and a photograph of the barracks, etc., showing their position and distribution.

The most novel and interesting features connected with this report, which is much too long to abstract or abridge without destroying its integrity, are the following:—

1. It denies the conclusions arrived at by Baron Humboldt, Dr. Fergusson, and others, of the possibility of yellow fever occurring at an elevation of 4,000 feet above the level of the sea. On this point the author states: "An opinion has long prevailed that the severe forms of tropical fever could not originate or spread at a considerable elevation above the sea."

The grounds for this opinion seem to be the statement of Humboldt, that yellow fever was confined to the low country on the coast near Vera Cruz, and that it did not pass the farm of L'Encero, elevated 3,045 English feet above the sea, "the heat there being insufficient to develop its germ;" and that of Fergusson, with reference to the varieties of fever occurring at different elevations in St. Domingo.

The remarks of these authorities were no doubt correct for the time and place; but it must not be thence concluded that all the conditions requisite for the production of these forms of fever, except that of suitable elevation, were present in the cases they adduce. Their deductions, therefore, require to be applied cautiously to other localities, and may render certain modifications of the conditions henceforward inapplicable to the same localities at another time.

2. It disposes satisfactorily enough in the present epidemic of the non-contagious nature of yellow fever. The following are the grounds for this conclusion: That out of 156 men, taken indiscriminately from the different barrack-rooms, very few of whom could have had yellow fever before, and who afford 210 instances of exposure for 24 hours to the emanations from the sick in the fever wards, that only 8 were subsequently affected with fevers of any sort, of whom 3 died; while from the remainder of the troops in the cantonment, amounting at the commencement of the epidemic to 523, there were 89 attacked with fever, of whom 38 died. Putting these numbers in the form of a centesimal ratio, for the sake of comparison, they stand thus:—

	Total strength.	Attacked per cent.	Died per cent.	Died per cent. of those attacked.
Men who attended fever cases . .	156	5.1	1.9	38.0
Men who did not attend fever cases .	523	17.0	7.3	43.0

It likewise disproves the commonly received opinion, that a temperature of at least 80 degs. Fahrenheit is necessary to develop its form, whatever that may be.

This fact is illustrated by the following table of temperature:—

1856.	6 A. M.	2 P. M.	6 P. M.	Mean.
July	67.5°	74.2°	72.5°	71.4°
August	67.1	73.8	72.0	71.0
September	67.4	73.7	71.8	71.0
October	65.3	72.7	70.1	69.4
November	62.2	69.2	64.2	66.6
December	60.1	68.8	63.5	65.3

the disease having prevailed as an epidemic at New Castle with a mean of 10 degs. lower, and continued until the mean temperature had fallen 5 degs. more.

The author confirms the fact previously noticed, of the suspension of yellow fever under the influence of heavy rain, which has been observed in every epidemic at Sierra Leone, at which time the fever assumed a purely remittent type. He inquires, "Can this be explained on the assumption of yellow fever being propagated by specific contagion?"

He concludes by stating, with reference to New Castle, that the above facts seem to leave open no other inference than that the yellow fever there in 1856 arose from local causes.

Whether similar causes were in operation there in other years, and if so, why they did not lead to a similar result, are questions that the present state of our information does not admit of being answered. It seems, however, that in addition to the ordinary local causes of disease, an epidemic constitution is necessary to account for the prevalence of fever.

Two out of three of the medical officers present were of opinion that it arose from local causes, and one that it might have been imported.—*Med. Times and Gaz.*, Feb. 20, 1858.

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17. *Diagnostical and Prognostical Value of Hæmoptysis.*—Prof. Trousseau observes that on finding an individual spitting blood, the first idea that presents itself is the existence of pulmonary tubercle; but if we note all the cases that present themselves, not in private, but in hospital practice, we shall find the hæmoptysis as often dependent upon other causes as upon tubercular disease. This statement, paradoxical as it may seem, is quite true when confined to hospital patients.

A form of hæmoptysis that is rarely met with in hospitals, is due to *hemorrhagic deviations.* We meet with women who, without suffering from any notable disturbance of menstruation, but who are the subjects of nervous symptoms, spit blood frequently in considerable quantity. Neither the symptoms nor attentive exploration of the chest, indicate any affection of the heart or lungs; and when the period of menopausis arrives, the hæmoptysis becomes arrested, and does not return. Other women spit blood during pregnancy or lactation, and cease doing so when these conditions are terminated. These nervous women are also sometimes the subject of menorrhagia, seeming to be under the influence of a hemorrhagic diathesis; and when the critical discharge does not take place by the uterine mucous membrane, it does so by the bronchial membrane. Although these hæmoptyses are not of the importance that might be supposed, and may be reproduced at longer or shorter intervals during several years, it must be borne in mind that this frequent repetition may induce a congested state of the respiratory apparatus, during which even a slight accessory cause may give rise to a more or less dangerous phlegmasia. Independently of abnormal circumstances, we may meet with hæmoptysis occurring, so to speak, as a physiological accident, supplying the place of a natural or accidental discharge of blood, which from some cause or other, does not take place by the ordinary channel. Thus, in women with obstructed menstruation, it is one of the most frequent forms of *hemorrhage supplementary to menstruation.* It will be readily understood that when with this peculiar disposition of the economy there is combined another dependent upon a local predisposing condition of the pulmonary apparatus, these hæmoptyses are still more readily produced. Under such circumstances the prognosis of hæmoptysis is far more serious than when it arises from hemorrhagic deviations unconnected with local occasional causes. Here, in fact, the accidents become complicated with the local lesion which has led to these manifestations, just as this itself is necessarily complicated by the fact of the fluxionary hemorrhagic movement, which, at each return, accelerates the evolution of such lesion.

As already observed, these varieties of pulmonary hemorrhage are rare in hospital practice. The form of the affection, however, there most commonly met with, is not hæmoptysis dependent upon phthisis, but hæmoptysis dependent upon disease of the heart. It is not meant by this to declare in an absolute manner, that tubercular hæmoptysis is of rarer occurrence than hæmoptysis dependent upon disease of the heart, but only to state that in phthisis, hæmoptysis being in general a transitory condition, occurring early in the affection, the patients do not come to the hospital, while hæmoptysis dependent upon heart disease occurs principally when the disease is much advanced, and, consequently, at the period when patients are obliged to resort to the hospitals. Proceeding to consider some of the points of diagnosis between these two forms, we find that in youth, adolescence, and the early period of mature life, from the sixteenth to the fortieth year, hæmoptysis most generally is dependent upon pulmonary tubercle, and that whether it is met with in hospital or private practice; but after the fortieth year, and still more after the fiftieth, it is no longer, generally at least, a sign of phthisis, but of disease of the heart. There are exceptions to this rule, but they do not invalidate its general truth. In phthisis bloody expectoration may either precede any other manifestation of the disease, of which it may then be considered the earliest symptom, or it may appear in the course of the affection. Laennec indicated its slight quantity as a characteristic, and regarded very abundant hæmoptysis as almost always due to pulmonary apoplexy. But he had little opportunity of observation in private practice. It is true that in general hæmoptysis is not abundant, but still there are cases in which it is overwhelmingly so, causing death by the sole fact of the loss of an enormous quantity of blood. Hæmoptysis, consequent on disease of the heart, is, notwithstanding, still seldomer overwhelming (*foudroyante*) than bronchial hemorrhage. It may recur fifteen, twenty, forty, or fifty days in succession without at once proving fatal. Of course, when dependent upon the rupture of an aneurismatic vessel into the bronchi, it may prove still more rapidly fatal than hæmoptysis supervening on phthisis. Besides the age of the patient and the progress of the symptoms as elements in the differential diagnosis, there is an important point in regard to the seat of the hemorrhage, viz., that while in phthisis it takes place generally at the bronchial surface, in disease of the heart it is most often parenchymatous, first occurring in the pulmonary vesicles.

As to the question of the characteristics of bronchial and pulmonary sanguineous expectoration, it is said that bronchial hemorrhage is observed under the form of spumous, semi-fluid sputa, resembling blood beat up with air, and having a bright redness, deemed characteristic. The quantity discharged is said to be sometimes very slight, and sometimes very abundant, not being mingled with the débris of alimentary substances or mucosities. But this is far from being always the case, as the sputa may be as viscous as those seen in the first stage of pneumonia, or in pulmonary apoplexy, an appearance, probably, due to the slight accompanying inflammatory action, or to the accumulation and detention of the blood in the lungs. So, too, we may find the discharges mixed with alimentary substances when the hæmoptysis is undoubtedly connected with phthisis. Stethoscopic signs are often at default, or indicate as much, or even more, the pulmonary lesion upon which the hæmoptysis depends. Generally at the autopsy of persons who have been the subjects of bronchial hemorrhage, we only find, besides the lesions proper to phthisis, redness of the pulmonary mucous membrane, which, indeed, may be due to imbibition. If cavities exist, they may contain a certain amount of coagulated blood, and that usually when vascular ruptures take place within these, otherwise we only find a little blood accumulated in the bronchi.

With respect to pulmonary hemorrhage, we may advert to the erroneous term, "pulmonary apoplexy," which has been bestowed upon it, giving, as it does, no idea of the nature of the affection. It occurs in general during the course of an affection of the heart; and at the autopsy kernels of engorgement are found of as deep a colour as the spleen, and as hard as those of pneumonia in its second stage. The tissue of the lung is friable, and presents the granular aspect of hepatized tissue, except that while in the latter the vessels and lobular intersections are visible, the hæmoptycal engorgement presents a uniform blackish, or very deep brown colour. This lesion, which would be better termed sanguineous infiltration, bears no analogy to cerebral apoplexy, the term apoplexy always implying the idea of suddenness and active fluxion, a condition rather belonging to bronchial than pulmonary hemorrhage, which is ordinarily, to a certain extent, passive. There are, indeed, cases of true pulmonary apoplexy giving rise to sudden death, and characterized by the effusion of more or less blood amidst the lacerated lung. The term apoplexy would be much better applied to cases of active congestion of the lung, a not very rare disease, but which is rarely accompanied by hæmoptysis, properly so called. Gendrin proposes to substitute for the term pulmonary apoplexy, *pneumohemorrhage*, indicating without ambiguity an extravasation of blood into the tissue of the lungs. As to the distinctive signs in these cases of pulmonary sanguineous infiltration, the expectoration is generally viscous, sometimes red, and sometimes black, and even deep black. But, as in bronchial hemorrhage, the blood discharged is also sometimes black, so in the pulmonary it is sometimes spumous, and that especially when it is quickly and abundantly discharged.

While lesions of the heart are the usual causes of pulmonary hemorrhage, contraction and insufficiency of the mitral valve is the most common of these lesions, and especially when, as is commonly the case, it is conjoined with ventricular hypertrophy. These hemorrhages are sometimes very considerable, and may recur three, four, six, eight, or ten times in the course of the disease of the heart; at other times, though rarely, they are slight and transitory, and do not reappear. When the lesion is much advanced, the patients may spit blood for one or two months, and sometimes until their death. The disposition of these hemorrhages is, in fact, to increase in frequency and in quantity as the disease of the heart—an effect of which they are—approaches its fatal termination.—*Union Méd.* 1857, Nos. 110 and 113.

18. *Action of Cod-liver Oil, and the Substitution of Ordinary Fats in Food.*—Dr. Edward Smith, in an interesting paper (*Edin. Med. Journ.*, Jan., 1858), urges the profession to reconsider the question of the administration of cod-liver oil, with a view to determine if the good which it effects cannot be brought about by ordinary articles of food.

The following are his deductions in reference to the effect of the administration of the oil in phthisis:—

"1. It does not remove the disease.

"2. The cases of arrest of the disease are very few.

"3. Commonly the disease progresses.

"4. In about a half the progress is lessened.

"5. The patient may report himself both stouter and stronger, and yet the disease silently progress.

"6. When it disagrees, it is chiefly from its influence upon the digestive organs.

"7. When it agrees, it is chiefly by improving nutrition; but in an appreciable number of cases it is believed by the patient to have a local influence, more or less apart from the state of general nutrition.

"8. This local influence is most important in the pharynx and other parts of the mucous tract, and there results from the direct application of the oil to the mucous surface.

"9. It acts almost exclusively by its fatty elements supplying a nutritive material of which the system has been in defect.

"10. In this respect, it has no advantage over the fats used in food, and may be rejected by the appetite like any other fat.

"11. There is a large class of cases in which it is not beneficial, and it is our duty to administer it with discrimination. As a rule, it is more commonly beneficial in those cases in which there is an appetite for the ordinary kinds of fat, and is rejected when ordinary fats are rejected; and hence the substitution of ordinary fats for the oil in equal quantities is not difficult.

"12. Upon the well known and beneficial principle of separating food from physic, it is our duty to supply this desideratum as an ordinary article of diet, to be selected from those which are commonly used in food, and to instruct the patient that we administer it as food.

"13. Although we may thus supply an important element in nutrition, and thereby avert many evils, we do not touch the essence of the disease, or do anything which shall necessarily remove the deposition which maintains the disease and tends to its further progress; and, in fact, we leave the disease much as we found it. It is not, therefore, a specific remedy, but an adjunct to treatment; and the great temporary good which it has so frequently effected proves the great importance of fat in the animal economy.

"My own practice may be readily inferred from these statements. If I desire to produce a local effect upon the throat, I often employ the cod-liver oil, either alone or in an emulsion, giving it in small quantities, and directing that it be swallowed slowly. If I have reason to believe that the patient has diminished the quantity of fat, either with or without other kinds of food, I direct him to increase it; but I do it with moderation, and by substituting a form of fat which he likes for one which he does not like, to take a moderate quantity of some kind of fat with every meal. An increase in the quantity of butter, and also of suet, when added to rice or other puddings, or when boiled in milk, is that which may be the most easily effected; but if the quantity directed is unreasonable, as, for example, the common plan of boiling half an ounce of suet in half a pint of milk, it often disgusts the patient, defeats the object, disturbs the digestion, and is wasted by the bowel. I recollect an instance in which having asked an Irishman the usual questions about fat meat, butter, suet, milk, and bacon, and directed him to increase the quantity of all of them, he mixed them all together and took them, to his great delight and benefit.

"In the foregoing paper, I have not discussed the mode by which fats exercise so beneficial an influence over the system, but have assumed that this benefit is admitted. I purpose to defer this inquiry, and, consequently, the consideration of the relative value of various other oils and of cod-liver oil. I may, however, state that the patients' objections to many oils, viz., the flavour and the ill effect upon the bowels, do not, in any degree, apply to the ordinary fats of food, for the simple fact that they are such implies that the flavour and general effect are commonly good and agreeable. The best contrast is, therefore, not that of cod-liver with other medicinal oils, but with such ordinary fats in food as nature has provided for us and made agreeable to us; and it is to this contrast alone that I have desired to direct attention.

"The chest diseases, other than phthisis, in which I have found cod-liver oil beneficial, are some states of chronic bronchitis and various pharyngeal affections of a more or less acute form. In these cases, it produces its immediate action upon the mucous membrane of the pharynx, and, if properly administered, certainly relieves the cough, with the expectoration and its train of evils. In the latter class of diseases, which often closely simulate phthisis, its influence is often exceedingly marked, and impresses the mind very deeply with the importance of the condition of the throat, in reference directly to the production of cough, expectoration, and slight hæmoptysis, and indirectly to the degree of irritability of the general system. Indeed, I have no doubt that the most serious disease often originates, or first manifests itself, in that locality."

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19. *Rottlera Tinctoria in Tapeworm.*—In our last No. (p. 522) we noticed the efficacy claimed for the kameela in the removal of tapeworm. Further evidence to the same effect has since been adduced.

Dr. Balfour stated to the Medico-Chirurgical Society, of Edinburgh, that during eighteen months' extensive experience in India there had been no recurrence of the worm after removal by this article. The kameela acts as a purgative, and brings away the animal dead.

Dr. Warburton Begbie said he could corroborate the statement of Dr. Balfour regarding the effectual manner in which the kameela acted in the removal of tapeworms, as that morning two drachms, obtained from Dr. Balfour, had been given to a patient in the infirmary, under his care, and a considerable portion of the worm had been already discharged. In a paper, by Mr. Hanbury, published in the *Pharmaceutical Journal* for February, 1858, very strong testimony was borne to the efficacy of the kameela in tapeworm by several Indian practitioners.—*Edinburgh Med. Journ.*, March, 1858.

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20. *On the Absorption of Medicinal Substances by the Large Intestine.* By M. Briquet.—The object of M. Briquet's two memoirs is the study of the absorption of medicinal substances introduced into the large intestine by means of clysters. The following are the general conclusions he has arrived at:—

1. The fluid constituting the injection may easily reach as far as the cæcum, and consequently may be brought into contact with a very large extent of absorbing surface. 2. The mucous membrane and the fluids that bathe its surface do not exert any chemical action upon the substances so introduced into the large intestine, where all that is absorbed is that which was previously in a state of solution. 3. When a clyster of the soluble salts of quinine, in doses less than 15 grains, is administered, rather more than a third of the quantity so administered is eliminated, and has consequently been absorbed. 4. When large doses are administered, they are ill-supported, and only a fifth or a sixth of the quantity is absorbed. 5. In whatever dose the quinine may have been given, it generally gives rise to cerebral symptoms only very slowly and to a slight degree. 6. Traces of elimination, and consequently of absorption are only met with an hour after the administration of a clyster, and even then the elimination is inconsiderable. 7. The duration of the elimination is usually short—two or three days at the utmost. 8. The greater or less dilution, within certain limits, the more or less viscous nature of the liquid, or the addition of the salts of morphia to the cinchona alkaloids do not exert any sensible modification on the absorption. 9. Absorption takes place more readily in the young than in the adult; and is performed with difficulty in the aged of either sex. 10. The salts of quinine, administered in clysters in doses of less than 15

grains, exert the same effect as when given in moderate doses by the mouth, and may be very well substituted for these. 11. But this is not the case with large doses, which are never absorbed in sufficient quantities to produce energetic effects. 12. The large intestine will rarely tolerate a larger dose than 30 grains of the sulphate. 13. These conclusions more or less exactly apply to the various substances administered by clysters. 14. The apyretic is notably more favourable to the absorption of medicinal substances than the pyretic condition. 15. The typhoid condition favours such absorption less than other states of phlegmasia. Nevertheless it is more energetic than hitherto supposed, being only about a tenth inferior to the absorption taking place in the pyretic condition. 16. In diabetes, the absorption of medicinal substances appears to be very feeble in the intestine. 17. In certain diseases, the tolerance or intolerance of medicinal substances may depend upon a special susceptibility rather than upon variations in absorption. Thus, in hysteria the tolerance of opium nowise depends upon an absence of absorption, but results from a special susceptibility. 18. The rapidity with which medicinal substances, such as the salts of quinine, are eliminated, is in a direct ratio with the quantity of urine passed. This rapidity is the exact measure of the time which the economy takes to rid itself of the greater part of fixed substances taken medicinally. 19. The absorption of medicinal substances, analogous to the salts of quinine is far more rapid in the young. 20. It is less active in females than in males, in the proportion of a sixth to an eighth. 21. Abstracting from a medicinal effect the portion due to the quantity of the substance absorbed, the remainder gives the measure of the susceptibility of being influenced by the medicinal substance.—*Bullétin de l'Acad.*, tom. xxii.

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21. *Case of Communication with the Stomach through the Abdominal Parietes, produced by Ulceration from External Pressure; with Observations on the Cases of Fistula of the Stomach, already recorded.*—This is the title of an interesting paper read before the Royal Medical and Chirurgical Society (Nov. 24, 1857) by C. Murchison, M.D. The author had seen the subject of the following history when on a visit to Aberdeen, in May, 1857. The patient was then under the care of Dr. Keith, Professor of Clinical Surgery to the Aberdeen Universities, to whom, also, he was indebted for the details of the case, and for permission to lay them before the society.

Catharine Ross, aged 34, was admitted into the Aberdeen Royal Infirmary, under Dr. Keith, Feb. 19th, 1857. She is the daughter of healthy parents—both still alive; but one of her brothers is epileptic, and of two of her sisters, one is liable to hysterical fits, and the other is idiotic. The patient herself, about the age of 18, became the subject of hysterical symptoms to an extreme degree. On more than one occasion, she has been convicted of feigning diseases, so as to deceive her friends and medical attendants. In 1844, she succeeded, by applying a tight ligature round the shoulder, in producing such a solid œdematous condition of the left arm that it was believed by her medical attendants to be elephantiasis. After two years of unavailing treatment, at her own suggestion she was admitted into the Aberdeen Infirmary, under Dr. Keith, with the object of having her arm amputated. Dr. Keith, however, exposed the fraud, and three weeks' confinement in a strait waistcoat cured the arm. Some years after this, she fancied she had heart disease, and a seton was introduced into the epigastrium by her medical attendant. This seton was allowed to ulcerate out, and the patient contrived to keep the resulting ulcer from healing by making constant pressure upon it with a copper penny-piece. The ulceration continued to advance, and after three years, viz., on March 2d, 1854, it penetrated the stomach, this organ having previously contracted adhesions to the abdominal parietes. On removing the dressings, on this day, a quantity of fluid, with a piece of biscuit and orange-peel escaped from the opening. This opening continued to enlarge, and the only way she could retain her food was by keeping it closed with a gutta-percha plug.

On her admission into the Aberdeen Infirmary in 1857, the opening was situated partly in the epigastric and partly in the umbilical regions, measuring four inches transversely, and three vertically. When the plug was removed, everything she swallowed immediately escaped from the opening; and if she raised herself up or coughed, the whole stomach became everted. The mucous membrane was of a vermilion red colour, and disposed in rugæ, along which undulatory movements could be observed. Blue litmus paper applied to the moist surface of the empty stomach was not reddened. The stomach could be manipulated in the freest manner without pain, the only effect being a slight feeling of faintness or nausea. The integuments surrounding the opening were red, glistening, and tender. Her appetite was good, often ravenous; and she could eat and digest any kind of food. She was much troubled with thirst, and had only one motion of the bowels in twelve days. For nine years, she had been confined to bed, but more from pretended than real ailments; so that, at last, her joints had become stiff, and she was unable to stand.

The author then gave an account of an experiment which had been performed upon the patient by Dr. Keith to demonstrate the mechanism of vomiting. From this it would appear that there is first contraction of the pyloric end of the stomach itself, but that the evacuation of the organ is chiefly caused by its compression, from the simultaneous contraction of both the diaphragm and recti and oblique muscles.

Dr. Murchison then gave a brief abstract of all the cases of fistulæ opening into the stomach from without, which he had been able to collect from the records of medicine and surgery during the last three hundred years. They amounted to twenty-five in number. He then proceeded to make some general observations on these cases, under the following heads:—

A. *The Causes of Gastro-cutaneous Fistulæ.* I. *Mechanical Injuries,* 7 cases. —1. Incised wounds of abdomen penetrating stomach, and ending in permanent fistulæ, 3 cases. 2. Gun-shot wounds, 2 cases. 3. A blow over stomach, ending in abscess, which opens both externally and into stomach, 1 case. 4. Ulceration from without, caused by pressure, 1 case.

II. *Disease,* 18 cases.—1. Cancer of stomach, 6 cases. 2. Simple perforating ulcer from stomach, probably 12 cases. 3. An abscess, originating external to the stomach, and opening both into this organ and externally, may have been the cause in one or two cases.

B. *The Situation, Size, and other Characters of the External Opening.*—In none of the cases hitherto recorded did the opening at all equal in size that which exists in Catharine Ross.

C. *Escape of Food swallowed by the Abdominal Opening.*—This was observed in all the cases; but in six, fluids only are noted as having escaped. In the case of St. Martin, the necessity of an artificial plug became, after a time, superseded by the formation of a natural one, from a fold of the mucous membrane of the stomach. The author pointed out that the escape of food, recently swallowed, from a fistulous opening in the abdomen did not necessarily depend upon a direct opening into the stomach.

D. *Duration of the Fistula, and possibility of Cure.*—In cases resulting from cancer of the stomach, death, as might be expected, speedily results, three months being the longest period that a patient has survived the fistula. On the other hand, where wound or simple ulcer of the stomach has been the cause, the patients have generally lived many years, and apparently enjoyed good health. One case is on record of a woman who lived for twenty-seven years with a fistula into the stomach; and the opening in St. Martin's stomach has existed for thirty-five years, he being still alive, and in good health. As to the question of cure, the author stated that in four of the cases the opening appears to have closed spontaneously; and in two others the obliteration was the result of treatment. In none of the cases was any cutting operation resorted to.

E. *General Health of Persons affected with Gastro-cutaneous Fistulæ.*—In permanent fistulæ, the general health has, in most cases, been wonderfully good. The chief abnormal symptoms have been great thirst, increased appetite, obstinate constipation, deficient secretion of urine, and in women, amenorrhœa.

F. *The Physiological Observations which have been made in cases of Gastro-cutaneous Fistulæ.*—In six of the cases, observations had been made as to the appearance of the gastric mucous membrane and the movements of the stomach, etc. Out of four cases in which the colour has been noted, it has been a bright vermilion red in three; but in the case of Alexis St. Martin it was a "pale pink." Movements of the stomach, for the most part of an undulatory nature, have been observed in five of the cases. In three of the cases, irritation of the mucous membrane has been observed to give rise to nausea and faintness, but not to cause any pain.

The author then proceeded to notice the various theories which have been entertained as to the mechanism of the act of vomiting, and stated that, from all the observations which had been made, including that upon Catharine Ross, the following conclusions might be arrived at: 1. That the act of vomiting is produced by the contraction of both the stomach and abdominal muscles. 2. That the contraction of the stomach is limited to the pyloric extremity, and has for its main object the closure of the pyloris. 3. That the chief part of the act is effected by the contraction of both the diaphragm and recti oblique muscles.

In three of the cases, observations had been made on the chemical and physical characters of the gastric juice, and on its digestive powers over different articles of diet, viz., on Magdelaine Goré, in Paris, at the commencement of the present century, by M. Clarion; on Alexis St. Martin, by Drs. Beaumont, Dunglison, and Smith; and on a female, at Dorpat, in 1853, by Messrs. Otto von Grünewaldt and Ernest von Schroeder. The nature of the results arrived at in each of these cases was briefly alluded to, and they were stated to be of a somewhat conflicting character.

No experiments, as regards the gastric juice, have as yet been undertaken in the case of Catharine Ross. Although the fistula in her case affords unparalleled opportunities for making such experiments, the author doubted much if the results obtained would be of much value in her present debilitated state of health. He observed, however, that for some months she had been improving in strength, and expressed a hope that she might yet become a fit subject for experiment.

The paper was illustrated with numerous photographs and drawings of Catharine Ross, and of several of the other recorded cases of gastro-cutaneous fistulæ.—*Med. Times and Gaz.*, Dec. 5, 1857.

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22. *Sugar and Diabetes.*—In our previous No., p. 506, we noticed some cases of diabetes treated with sugar. Dr. Budd has since related (*Med. Times and Gaz.*, May 22d, 1858) another case of diabetes treated by this plan. The subject of it was a widow aged 53, for a considerable time affected with diabetes, admitted into the Bristol Royal Infirmary 11th March, 1858.

"The symptoms which first arrested our attention were frequent calls to make water, with great increase in the quantity passed, which amounted to several quarts daily; insatiable thirst, progressive weakness, and loss of flesh; and severe pruritus of the external parts. These complaints had come on rather suddenly about fifteen months before admission, in immediate sequel to severe mental anxiety. During the interval, she had been for some time an out-patient of the Infirmary, and subsequently, and for a period of rather more than two months, a patient at the Clifton Dispensary. She had never before, within her recollection, had any illness requiring medical attendance.

"When admitted, her debility and emaciation were extreme. The degree of wasting may be estimated by the fact that when placed in the weighing machine she was found to weigh only sixty-five pounds. She was unable to stand or even sit up in bed, without being supported. The skin was peculiarly harsh and dry; the pulse 100. On the day after her admission, and for many subsequent days, the tongue was dry and brown. Her nights were much disturbed by calls to make water, and her thirst was very great. There was a hectic flush on the cheek, and she was much harassed by frequent dry cough and by pains of the chest. Although there were no physical signs of lung-deposit, my impression was that she was most probably the subject of tubercle.

"She had reached, in fact, what Dr. Prout describes as 'the last and usually the briefest' stage of diabetes.

"On the day after her admission she was placed for five days on the ordinary (technically, 'the middle') diet of the house. No medicine was given.

"During these five days she passed six pints of urine daily, of sp. gr. 1040°.

"On March 17 she was ordered to take ten ounces of the best white sugar daily, and was put on the following dietary:—

"Bread (common) 12 ounces; meat 12 ounces; butter 3 ounces; greens 8 ounces; beef-tea 1 pint; sherry 4 ounces; to all which, two eggs were added on March 22. An ounce of cod-liver oil, which she took daily from the day after her admission until April 16, may also, I presume, be fitly included in this list.

"On March 18, twenty-four hours after the adoption of this scheme, there was an increase of three pints in the quantity of urine passed, which now amounted to nine pints, of sp. gr. 1040°. Her thirst had also increased, and she was weaker. The pulse had risen to 116. In short, she was in all respects worse.

"On the 19th, under the same treatment, the quantity of urine fell to eight pints, and the specific gravity to 1037°.

"As, with the exception of the sugar, the new dietary differed from that for which it was substituted chiefly in containing much less amylaceous matter, it was tolerably clear that the sudden aggravation of the diabetic symptoms was due to the administration of the sugar.

"Under the idea that the fault might be, not in the principle, but in the application of it, I did not withdraw the sugar, but merely reduced its quantity from ten ounces to five.

"As the patient complained much of inability to sleep, I, at the same time, ordered five grains of compound soap pill to be taken at night. I may add that as this prescription seemed to answer it was continued for the next ten days, when it was left off on account of constipation.

"The opium probably had something to do with the sudden improvement which now occurred in the quality of the urine.

"Be this as it may, the quantity of this secretion fell on the following day to five pints, its specific gravity continuing at 1037°. On the next succeeding day five pints were again passed, of specific gravity 1036°.

"Between this date and the 30th March, the urine fluctuated in quantity between five and a half and six pints, and in specific gravity between 1037° and 1040°.

"The only changes worthy of note in the patient herself were, that the tongue had become moist, and that she was somewhat stronger. She was able to sit up in bed, and could stand for a few moments without support. She relished the sugar, and it appeared to agree with her. Nevertheless, on being put in the weighing machine on the 30th March, she weighed only sixty-four pounds; so that in sixteen days she had lost one pound.

"As from the history she gave of herself there was reason to believe that her loss of flesh for some time prior to her admission was more rapid than this, the true interpretation of this fact probably was, that some check was already being put to her downward progress.

"In the next fortnight she steadily improved. On the 13th April, this note occurs in the journal of her case:—

"'Weighed yesterday, 69½ lbs. Pulse 76; tongue clean and moist; skin soft and moist, having entirely lost its original harshness; gains strength daily; appetite good.'

"She is now sitting up for an hour or two every day. The cough and other chest symptoms had entirely ceased. The only change made in the treatment during this last interval was, that on the 30th of March the sugar was increased to six ounces daily, and on the 3d of April a quinine mixture was ordered to be taken three times a day. Half a pint of bitter beer was also substituted for the sherry. The urine, meanwhile, continued pretty steadily at six pints, its specific gravity ranging from 1035° to 1040°.

"On the 20th, that is, seven days later, there is this further note: 'Weight, 72 lbs; better in every respect; remains up six hours every day, and walks about.'

"In the week following she scarcely held her ground. In the early part of the week some relatives came to visit her, with whom she was on bad terms. A violent altercation ensued, and she was much agitated during the night. On the day following the urine had increased more than a pint, and the specific gravity had arisen several degrees. She continued to be very poorly for some days, and on the 27th she weighed only 71½ lbs., being half a pound less than the week before. Annoyances of the same kind have occurred to her several times since, and have always been followed by a similar change for the worse.

"On the 24th the quinine was left off, and twenty minims of the dilute nitric and muriatic acids, in equal parts, were given three times a day, instead. This last medicine she still continues to take.

"On the 27th of April the sugar was increased to eight ounces, that is to say, to within two ounces of the quantity first prescribed. It is deeply worthy of remark that without any other change being made, the urine on the day following, instead of increasing, showed a large diminution. On the 25th, 26th, and 27th, she passed 6 pints on each day; the respective specific gravities being 1035°, 1036°, and 1034°. On the 28th of April she passed only 5 pints, of specific gravity 1034°. On the 29th, 4½ pints, of specific gravity 1035°, and on the 30th, again, 4½ pints, of specific gravity 1034°.

"On the 4th of May, her weight had further increased to seventy-three pounds: a point at which she still remains. Beside this she is in all respects very much better. The tongue is clean and moist, the appetite is good, the bowels are regular, and the thirst is moderate. She is generally up the greater part of the day, and on fine days often passes much time in the infirmary garden. On the 3d of May, after having spent a good part of the morning in that way, she went out on foot, to visit a sick relative, and walked more than half a mile without fatigue.

"During the last ten days the urine has only once reached six pints; the average quantity for the other nine days being somewhat short of four pints and a half; and the average specific gravity for the whole period 1034°.

"One change has occurred in the patient while under this treatment, which deserves to be specially mentioned on account of its physiological interest. When she came into the Hospital she was almost as dark in complexion as persons affected with bronzed skin. As the treatment proceeded she became visibly lighter, week by week, to such a point that it would be difficult to recognize her now as the same person.

"The speedy subsidence of the chest symptoms equally deserves to be brought into prominent notice. We might, no doubt, attribute this to the opium employed. I would observe, however, that a precisely similar result occurred in the case of Snailum, to whom no opium was given. I withhold all comment from these facts, at present, beyond suggesting that they may both very possibly be eventually found to possess an interest extending far beyond the present topic.

"In summing up the results detailed in the preceding narrative, the leading facts appear to be these:—

"1. In the interval between the 30th March and the 4th May, the patient gained nine pounds (a gain representing one-seventh of her whole weight), with a proportionate recovery of health and strength.

"2. During the same period she was taking from five to eight ounces of sugar daily.

"And 3. Notwithstanding this large daily consumption of sugar, instead of an increase, there was an abatement of the proper diabetic symptoms.

"In connection with these results, I shall confine myself at present to two remarks.

"The first is the very obvious one, that whatever may happen in other cases, or whatever may be the ulterior issue of this one, these facts will abide.

"The second is, that as it is impossible to suppose the sugar to have been without effect, the results here detailed must have been obtained either in consequence of its administration or in spite of it. If in consequence, then the facts are of extreme importance; but if in spite of it, they are scarcely less remarkable in the extreme opposition they offer to all we have hitherto been taught on the subject."

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23. *Diphtheria.*—The following remarks from the last quarterly return of the Registrar-General are important:—

"A disease, which is not new, but has been described afresh in France, has been fatal in several districts. It has been called 'throat disease' in some of the returns, and from its having attacked English visitors in Boulogne, the name of that town has been occasionally employed to qualify the affection. Diphtheria, its name in the statistical nosology, is adopted from the French writer who described the disease under the name of *diphtherite*, in reference to the characteristic membranous exudation in the throat.[1] The termination *itis*, as in gastritis, is used in medical language to designate pure inflammation of the organ, which the root of the word expresses; hence *ia* has been substituted for *ite*, the French form of *itis*, as this cannot with any propriety be placed after *diphthera*, designating a product of disease, and not an organ of the body.

No notice has been taken of the disease by the registrars either in the country north of Staffordshire or in Wales; and it has probably not prevailed there epidemically to any great extent. It is, however, allied to one of the forms of scarlatina, and is still confounded with that disease, with croup, or with quinsy, by some practitioners.

Diphtheria, like Asiatic cholera, is probably only a more intense form of an old disease; but new intense spreading forms of disease deserve close attention, for, with the increasing density of population, the intimate connections between England and every unhealthy climate of the world, and the slow progress of sanitary improvement, we cannot consider ourselves absolutely safe from an eruption of some epidemics, which, like their predecessors, may open a new chapter not only of medical but of national history; for Niebuhr acutely remarks, that the great epochs of history are marked out by pestilences.

Epidemics, like new varieties of animals, spring up under favourable circumstances. Each epidemic form has its congenial climate. The cholera epidemic is bred on the delta of the Ganges; yellow fever on the banks of the Mississippi; plague around the Nile in Lower Egypt; typhus in our towns; ague in our marshes; diphtheria, according to the popular theory in France, where the conditions are more favourable, on the whole, than they are in England, to the diffusion of putrid effluvia over the fauces.

Every Englishman admires the works of art, the picture galleries, the houses, the furniture, the cultivated personal tastes which surround him on every side in Paris, or on a small scale in Boulogne. He admires some of these objects every day, others every week, but has every day to give up his admiration at the door of that inscrutable *cabinet* where the light of French refinement never comes; where his throat is assailed by the poisonous distillations that engender disease, and explode, if you count well the victims, with much more fatal consequences than gunpowder, or even than fulminating quicksilver. That men should lock up jewels in cabinets, keep their larders full of delicacies, or stock their cellars with wine, is natural; but it is a singular absurdity in civilized men to attempt to hoard for years this volatile essence, which bursts its chains, and, like an unclean spirit, enters not only every apartment in the house, but every channel of access to the living chambers of the body, leaving at times such traces of its passage as diphtheria in the throat. The disease once generated, wanders abroad, and destroys life under circumstances quite different from those in which it was born; but impurity is always its natural ally.

The Scotch threw these matters into the streets, and justly incurred the censure of the fastidious. In London, and even in the country mansions of England, retreats still exist which may rival the French magazines of impurity; but it has of recent years been the practice to throw the guano compounds of London, with water, into the sewers; which, though not constructed for the reception of such matters, and consequently suffering their volatile principles to escape into the streets, convey a portion of their elements to the Thames, and commit them to its flood of tidal waters.

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[1] Diphthera—διφθέρα—a prepared hide, leather. διφθεραι were used for writing on in the east, like *vellum* or *parchment.* (Liddell and Scott.)

Dr. Barker has recently performed an ingenious series of experiments on animals to determine the effects of each of the noxious principles which arise from cesspools. He placed the animals in a close chamber by a cesspool, with which a tube opening into the chamber communicated, and a lamp was arranged so as to draw a current of cesspool air steadily over the creature's inside. With a pair of bellows Dr. Barker could draw the air from the chamber. A young dog in half an hour 'became very uneasy and restless; he vomited, and had a distinct rigor, and, in the course of a day, was exhausted. When he was removed he soon recovered.' 'Another dog was subjected to the cesspool air during twelve days;' in the first seven days he underwent a series of sufferings, not unlike the symptoms of the disease of children in hot weather; on the ninth he was 'very ill and miserable.' After he was liberated, on the twelfth day, he remained 'very thin and weak for six weeks.' Dr. Barker then continued his experiments on the effects of definite doses of the gases in the sewers, and killed or poisoned several sparrows, linnets, jackdaws, and dogs.

Thus Dr. Barker has, for our instruction, imitated on a small scale, and on a few of the inferior animals, the vast experiment which is constantly going on, and destroys thousands of men, women, and children all over England. Instead of a few animals in a close chamber, more than two millions of people live in London over sewers and cesspools. The poison is generated in every house; it is distributed conveniently along all the lines of road, so as to throw up its vapours into the mouths, throats, and lungs of the people through innumerable gully-holes, which are either left untrapped or trapped imperfectly, in order that the poisonous gases might escape. A variation in the pressure of the atmosphere draws up the stinking air from the sewers like Dr. Barker's bellows. All the details of the experiment were as carefully contrived by the engineers of the old sewers' commissioners as if they were constructing an apparatus for passing currents of poisonous airs steadily over the people of London, with a view, like Dr. Barker, to ascertain their exact effects. The engineers of the new Board of Works have endeavoured to keep the apparatus in order.

It is now time that this cruel experiment should cease. Last year, when no epidemic prevailed, not less than 14,795 unnatural deaths were registered in London. This was the aggregate effect of the impure airs, and of other sanitary defects."—*Med. Times and Gaz.*, May 15.

24. *Report of the Belgian Academy of Medicine on Vaccination.*—The following are the conclusions of an elaborate report made to the Academy by a committee consisting of MM. Craninx, Verheyen, and Marinus: 1. The preservative power of vaccine virus is absolute in almost the totality of cases. 2. In a very small number of cases in which the virus has only imperfectly destroyed the constitutional predisposition to variola (which cannot be ascertained by any appreciable sign), this preservation lasts only for a time, the duration of which cannot be assigned, but which does not cease prior to the seventh, or even the tenth year after vaccination. 3. The cases of variola supervening on vaccination are few in number, and in general are very slight, consisting, in most cases, in an eruption called from its mildness *varioloid*. 4. Variola may appear after variola, as well as after vaccination. 5. Human vaccine virus becomes gradually weakened by successive transmissions, without, however, entirely losing its preservative property. It is, therefore, both useful and necessary to renew the lymph whenever true cowpox matter can be procured. 6. The regenerated virus produces a finer eruption, the course of which is slower and more regular than that of the old virus. 7. The reaction or vaccinal fever which accompanies the eruption is more marked and active—a condition of its preservative power. 8. The number of pustules produced by this lymph is greater, and they appear on individuals who had resisted the influence of the old virus. 9. The new lymph succeeds better in revaccinations

than the old. 10. The lymph should be taken from the finest and the best developed pustules. 11. Primary vaccine lymph exists in Belgium as well as in other countries. 12. To obtain a due supply of cowpox, the government should accord premiums to the proprietors of cows who promptly make known the existence of true cowpox. 13. Rewards should also be decreed to medical and veterinary practitioners, who by their zeal contribute to its discovery and propagation. 14. Revaccination is the useful and indispensable complement of a first vaccination, not that it is always necessary, but in order that certainty may be acquired that all disposition to the receptivity of variola has been extinguished in the economy. 15. From the tenth to the fifteenth year is the best time for a revaccination, supposing the subject to have been vaccinated in early infancy. 16. If the revaccination succeeds, we have a right to believe in the continuance of the preservation against variola. If it fails, it should be repeated at more or less distant intervals, so that we may be assured by these test vaccinations of the immunity of the subject. 17. Vaccination, far from having had an injurious influence upon mankind, has delivered it from the scourge of smallpox, and the various evils and infirmities which accompany or follow this. It is an error to charge it with having led to the physical and moral degeneracy of mankind. 18. Vaccination and revaccination cannot be rendered compulsory in Belgium, but it is incumbent upon the government, having as its duty to watch over all that concerns public health, to employ all means at its disposal in order to extend and generalize the practice. Then follow various recommendations to this end.—*Med. Times and Gaz.*, May 15.

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25. *Supra-renal Capsules.*—The No. of the *B. and F. Med.-Chirurg. Rev.*, for April last, contains a second article by Dr. GEO. HARLEY on the functions of the supra-renal capsules, and their supposed connection with bronzed skin. This portion is devoted to the *pathology* of these capsules, and presents a summary of the facts thus far observed. The following are Dr. Harley's conclusions:—

Firstly. That bronzed skin may exist without the supra-renal capsules being diseased. Secondly. That complete degeneration or total absence of the supra-renal capsules may occur without any bronzing of the skin. Thirdly. That bronzed skin may be associated with a variety of different morbid conditions of the system, among which a prominent one is disease of the supra-renal capsules. Fourthly. That bronzed skin may be present without any derangement of the other functions of the body being observed. The treatment of the affection must consequently be varied accordingly.

Upon the anatomical and physiological grounds previously stated, Dr. H. looks upon the symptoms of anæmia, languor, debility, feebleness of the heart's action, and irritability of the stomach, not as the result of the suppression of the function of the supra-renal capsules, but rather as being occasioned either by a diseased state of the solar plexus *per se*, or by an irritation of the ganglionic system of nerves caused by the close proximity and intimate connection of diseased supra-renal capsules.

In a postscript, Dr. Harley adduces the following additional facts, tending to strengthen the views he has advocated:—

1st. "*The capsules are not vital organs.*"—Although nearly eight months have elapsed since M. Philipeaux and I removed the capsules from some animals in Monsieur Flourens' laboratory, at the Jardin des Plantes, I have still one in my possession, alive and healthy. The absence of its spleen and supra-renal capsules does not appear in any way to disorder its functions. The skin and hair still remain perfectly white. Dr. Brown Séquard has lately attempted to explain the cause of our success in removing the capsules, by supposing that in albinoes the capsules have no function to perform. This argument is easily proved untenable; for I have been equally successful in my operations upon coloured animals. Dr. Martin Magron some time since, and M. Philipeaux very recently, have published similar results.

2d. *When death follows extirpation of the supra-renal bodies, it is in most cases in consequence of the injury done to the neighbouring tissues; perhaps most frequently the mutilation of the ganglionic system of nerves.*—Having procured, in the latter part of February, three gray and white rats, I selected the largest and strongest for operation. On cutting down on the right supra-renal capsule, I was surprised at its unusual size. On examination, after removal, it was found at least four times its normal bulk, and on section and microscopic examination, proved to be the seat of extensive tubercular deposit. The day after the operation, the animal's respirations were very laboured, and about seventy in the minute. It gradually got worse, became very weak, and died, on the sixth day, with symptoms of some pulmonary affection. On examination, however, the lungs and air-passages were found perfectly healthy. *Both* sides of the heart were full of blood. All the abdominal organs were engorged. The left supra-renal capsule shared the congestion, but was otherwise healthy. The urine contained albumen. No marks of any disease were anywhere to be found except in the neighbourhood of the right semi-lunar ganglion. This point was the seat of tubercular deposit, in the midst of which was a mass of similar constitution, about the size of a split pea, probably a lumbar gland. The diseased mass completely covered the right semi-lunar ganglion. Was it the absence of the diseased capsule which killed this animal? Or was it the injury done to the already diseased ganglion? Most probably the latter. The two fellows of this rat were also operated upon. I crushed the right capsule of the one, and removed that of the other. Yet both these animals are alive and well.

3d. *Bronzing of the skin may occur without disease of the supra-renal capsules.*—A very interesting case of this kind is very ably reported by Dr. Sloane.[1] The author remarks that "the tint of the skin in the face was as dark as that of a mulatto, and over the abdomen, armpits, loins, hips, inner and upper part of thighs much darker. . . . . She (a young woman) was not of a negro or foreign descent. . . . . Left supra-renal capsule two and a quarter inches long, and one broad; weighs sixty-five grains. Right, two inches in length, one in breadth, and weighs sixty grains. Both appear normal, and free from any morbid deposit." This is now the eighth well-marked case of bronzing of the skin without disease of the supra-renal bodies.

4th. *Diseased supra-renal capsules is not always associated with bronzing of the skin.*—In the *British Medical Journal* of the 6th of February, 1858, Dr. Brittan relates two cases of supra-renal capsular disease in which no bronzing of the skin occurred. One of the cases merits special notice. The patient, a young man, aged nineteen, was fair complexioned. The right capsule "was very large and friable, and filled with tubercular-looking deposit. . . . ." The left "was like that of the right side."

In January, I showed to the Pathological Society two very much hypertrophied supra-renal capsules, that were removed from a patient who died of acute pulmonary phthisis, while under the care of Professor Walshe, in University College Hospital. The skin of this patient was perfectly white, and yet the enlarged organs were completely filled with tubercle. No trace of the normal medullary substance was anywhere to be found, and only here and there among the foreign material could remnants of the cortical columnar cell-masses be detected. This is now the fifteenth case of extensive disease of the supra-renal bodies, unassociated with bronzing of the skin, that has been reported within the last eighteen months. I have purposely omitted making any mention of those cases where only one capsule was diseased, or that otherwise appeared of a doubtful nature.

26. *Bronzed Skin and Disease of the Supra-renal Capsules.*—The eighth vol. of the *Transactions of the Pathological Society of London* contains some interesting facts which contribute to the solution of the question now under discussion, as to the relation existing between bronzed skin and disease of the supra-renal capsules. As we have not received this volume, we extract the following interesting notice from a review in the *Edinburgh Med. Journ.*, May, 1858:—

"Our readers are aware that, about three years ago, Dr. Addison directed the attention of the profession to a fatal form of anæmia, associated with a peculiar coloration, since termed 'bronzing' of the skin, and which he believed to depend upon diseases of the supra-renal capsules. This announcement excited much interest; special attention was immediately directed to the subject, and, within the last three years, pretty numerous cases have been recorded, some confirming, others opposing Dr. Addison's views. Accordingly, pathologists are, at present, divided in opinion, some believing, with Dr. Addison, that the capsular disease and the bronzed skin are associated as cause and effect, others maintaining that their occurrence is accidental, and that no real connection between them exists. The question is one not of theory but of fact, and although at present it cannot be considered as decided, materials for a solution are gradually accumulating. The volume before us makes an important contribution to these materials.

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[1] Medical Times and Gazette, 29th August, 1857, and Dr Wade's Report in the Midland Quarterly Journal, 1st January, 1858.

The controversy has been by some limited to a consideration of the replies to be given to the following questions: First. Is disease of the supra-renal capsules invariably associated with bronzed skin? and second. Is bronzed skin invariably associated with disease of the supra-renal capsules? Now, although we believe that both of these questions must be answered in the negative, still it by no means follows that we are to reject entirely Dr. Addison's hypothesis, although we may look upon it as less general in its application than its author and his followers have supposed. Two sets of observations, opposed to Dr. Addison's views, have been recorded; in the first are included cases where the capsules have been found diseased, and where there was no discoloration of the skin; while, in the second, we have cases of bronzing of the skin occurring without disease of the supra-renal capsules. These cases are generally attempted to be disposed of in the following way: To explain the first set, it is maintained that the disease of the capsules has been recent, and that the patients have died before the bronzing of the skin (necessarily a slow process) could have had time to take place; while, as regards the other set, it is argued that the observers may have mistaken discoloration from some other cause for the true supra-renal bronzing. Without entering into particulars, we can at present only express an opinion that both of these arguments are unsatisfactory, and that an attempt to claim too much is very likely to be met by an entire negation of what is really just. Turning now to the *Transactions of the Pathological Society*, we find eight observations connected with the present inquiry; of these, however, only five are available; in the other three, the disease of the capsules having been partial or limited to one of the glands. The remaining five cases may be arranged as follows:—

1. Cases favourable to Dr. Addison's views.

This includes only one case, recorded by Dr. Baly, where, in a lad aged 18, there was well marked bronzing of the skin, with complete disorganization of the supra-renal capsules.

2. Cases where the capsules were diseased, without bronzing of the skin.

This group includes three cases, two recorded by Drs. Peacock and Bristowe, where the capsules were converted into masses of cancer, and one reported by Dr. Ogle, where the capsules were infiltrated with tubercle.

3. Cases of bronzing of the skin, with healthy capsules.

Of this, an example is recorded by Mr. Hutchinson, in the case of a man of 25 years of age, who died of pneumonia.

We must not omit to allude to an interesting observation recorded by Dr. Harley, where the supra-renal capsules, removed by operation from a cat, were found in a state of fibrous and calcareous degeneration, the health of the animal having been good, and all its other organs sound.

On the whole, then, it appears that the balance of evidence, as contained in this volume, is opposed to Dr. Addison's views. We are inclined, however, to take a middle course, neither accepting entirely, nor rejecting completely, Dr. Addison's hypothesis. We believe that, in the present state of the question, the following conclusions may be legitimately drawn:—

1. Disease of the supra-renal capsules is not necessarily associated with brozing of the skin.

2. Bronzing of the skin may be produced by other causes than supra-renal capsular disease.

3. Disease, or even complete disorganization of the supra-renal capsules, may exist without giving rise to any special symptom.

4. Peculiar symptoms have been found associated with supra-renal disease in so many cases as to render it probable that the association is more than accidental, and that under certain unknown conditions, a real influence may be exerted on the economy by a disease of the capsules."

27. *Congenital Absence of the Supra-renal Capsules.* By Dr. MARTINI, of Florence.—This case was communicated in a letter to M. Flourens, and by him read before the Academy of Sciences at Paris.

CASE.—"In one of the wards of the Hospital of Incurables, Naples, G. M——, a man aged forty years, died of pulmonary tuberculosis. On inspection, M. Martini was surprised at first not to find the kidneys in their proper place, but soon perceived, over the promontory of the sacrum, the existence of a lobular ovoid mass: this was a fusion of the two kidneys into one single body.

"This renal body received from the aorta a single emulgent artery, which soon divided into four branches, corresponding to the venous branches, which likewise reunited in one emulgent vein. Two ureters of the ordinary calibre, but very short, went to the bladder. The mass of this body was divided into five lobes, and its anatomical structure was that of a normal kidney. This anomaly was accompanied with a total absence of the supra-renal capsules, of which there was not a single trace, nor, on minute dissection of the five lobes, could any vestige of them be seen.

"This man had a *white* skin; had lived up to forty years, and died of a malady of the chest; he had sufficient strength to work at his trade of joiner; was married, and had three sons."—*Glasgow Med. Journ.*, July, 1857.

28. *Disease of the Supra-renal Capsules with Bronzed Skin.*—Dr. ADAM MARTIN records (*British Med. Journ.*, May 15, 1858) an example of this in a married female, æt. 50. The skin all over the body was of a dark bronzed colour, especially over the shoulders, face, and hands. The *left* supra-renal capsule was shrivelled into a mere membrane, without any glandular structure. The right was converted into a cyst of about the size of a pigeon's egg, and filled with a sero-purulent fluid.

29. *A New Case of Amyloid Degeneration.* By Dr. RUD. VIRCHOW.—This kind of degeneration has often presented itself to the notice of the author, but not to the same degree as in the present case.

CASE.—A woman of a certain age, suffering from Bright's disease, with dropsy, died on the 5th December, 1856. On examination, the two kidneys, the spleen, and the liver were found to be enlarged and transformed into amyloid matter.

The spleen, weighing 473 grammes, was almost entirely transformed into amyloid matter. It had the appearance of being congealed. The small arteries of the kidneys and the Malpighian bodies had undergone the same transformation. The hepatic cells were healthy, but the small vessels of the acini were affected. The liver itself weighed 2687 grammes. The intestine presented a peculiar anæmic, translucid, palish gray, puffy appearance, and on examination the vessels of the villosities were almost all affected with the degeneration in question. In certain parts this change had extended to the substance of the coats of the bowel. The urinary and genital organs were also considerably affected, particularly the uterus, which was hypertrophied, and yellowish-gray in colour. The microscopic and chemical evidences of starch were almost everywhere present.

In a word, Professor Virchow found starch in every organ examined—in the heart, in the lungs, in the nerves, &c.; and everywhere the signs were unmistakable. The characteristic blue colour was brought out either by iodine alone, or by iodine in conjunction with sulphuric acid; and when the last mode of testing was employed slowly, this colour remained intact for six weeks.—*Ranking's Abs.*, vol. xxvi., from *Archiv f. Path. Anat. u. Phys.*, Feb. 1857.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

30. *On the Early Stages of Inflammation.* By Jos. Lister, Esq.—In this communication, the author gives an account of an investigation, with which he has been recently occupied, into the process of inflammation in the frog's foot. The paper is divided into four sections, with an introduction and conclusion.

In the introduction, it is observed that "so far from our knowledge of inflammation being in a satisfactory condition, authorities are at variance upon the fundamental question whether it is to be regarded in accordance with John Hunter's opinion, as active in its nature, and consisting in an exaltation of the functions of the affected part, or whether it should not rather be considered a passive result of diminished functional activity. . . . In seeking for the solution of this great problem, we cannot expect to gain much from the contemplation of the more advanced stages of inflammation. . . . It is upon the first deviations from health that the essential character of the morbid state will be most unequivocally stamped; and it is, therefore, to the early stages of inflammation that our attention must be chiefly directed."

Some cases are then mentioned to show that "in the early stages of inflammation in the human subject, whether induced by mechanical irritation or by an acrid application, such as mustard, or of spontaneous origin, the minute vessels become abnormally loaded with red blood, the corpuscles of which ultimately become to a greater or less extent arrested prior to the occurrence of effusion." It is afterwards shown, from numerous facts, that "conclusions arrived at from the study of the early stages of inflammation in the foot of the frog will apply in all strictness to the same morbid process in man."

The remainder of the introduction is occupied with a sketch of the principal theories which have been proposed to account for the obstruction to the progress of the blood-corpuscles in the early stages of inflammation.

The first section of the paper is devoted to the discussion of the aggregation of the corpuscles of the blood. It is shown by the author that the *rouleaux* "are simply the result of the disk-form of the corpuscles, together with a certain, though slight degree of adhesiveness, which retains them pretty firmly attached together when in the position most favourable for its operation, namely, when flat surface is applied to flat surface, but otherwise allows them to slip very readily upon one another." The aggregating tendency of the red disks is thus regarded as a phenomenon, similar in kind, though inferior in degree, to the well-known adhesiveness of the white corpuscles. It is further shown, from numerous experiments, that the red corpuscles vary remarkably in adhesiveness, in consequence of changes in physical circumstances, or very slight chemical action.

Section II. is on the structure and functions of the bloodvessels.

Allusion is made to a paper by the author, which will shortly appear in the *Transactions of the Royal Society of Edinburgh*, where he has recorded the observation that, in the smallest arteries of the web of the frog's foot, the middle coat is composed of muscular fibre-cells wrapped spirally round the internal membrane. The parietes of the minute arteries are thus provided with a most efficient mechanism for diminution of calibre, and contrast, in this respect, very strikingly with the delicate nucleated membrane which constitutes the wall of a capillary. The functions of the two sets of vessels are described as being in harmony with these differences in structure; the arteries being specially characterized by contractility, while the capillaries exhibit only such changes of calibre as are explained by elasticity.

The thinness of the capillary wall is believed to favour the mutual interchanges between the blood and the tissues, but the consideration of some facts of physiology leads the author to the conclusion that, notwithstanding the distending force of the current of blood, the liquor sanguinis is not effused as a whole among the tissues in the state of health; and this is thought to imply that there subsists a mutual repulsion between the materials of the capillary wall and the elements of the liquor sanguinis, preventing the passage of the latter into the pores of the former, except in so far as they are attracted by the tissues for the purposes of nutrition.

The heart is believed by the author to be the sole cause of the circulation of the blood in the frog's foot, and it is proved experimentally that other sources of movement cannot have more than a very trivial influence, and that their cessation, supposing them to exist at all, does not give rise to arrest of the blood or accumulation of corpuscles in the capillaries.

Distinct evidences of muscularity and contractility have been detected in the veins of the frog's foot, but, compared with the arteries, the veins show very little spontaneous contraction.

Regarding the influence of changes in arterial calibre upon the blood in the capillaries, the author is led to conclude that "the arteries regulate by their contractility the amount of blood transmitted in a given time through the capillaries, but neither full dilation, extreme constriction, nor any intermediate state of the former, is capable *per se* of inducing accumulation of corpuscles in the latter."

The influence of the nervous system upon the arteries has formed the subject of a special experimental inquiry, the results of which are given in a supplement to the paper. It is there shown that the contractions of the arteries of the frog's web are regulated by a part of the spinal cord, the irritation of which induces complete constriction of the vessels, while its destruction is followed by permanent dilatation. Neither stimulation nor removal of the nervous centre for the arteries produces any perceptible change in the quality of the blood, as respects adhesiveness of its corpuscles or otherwise.

Section III., "On the effects of irritants upon the circulation in the frog's web," commences with an account of some experiments performed with tepid water applied for a brief period to the foot. This agent, which was selected as the mildest possible stimulant, produces, in a very beautiful manner, constriction of the arteries, followed by dilatation, with corresponding changes in the amount of blood transmitted through the capillaries, as explained at the close of Section II. When, however, such experiments were frequently repeated upon the same animal, and especially if the temperature of the water was more elevated, effects of a different kind began to show themselves; the corpuscles of the blood experiencing obstruction to their progress even while the arteries were fully dilated, and the vessels consequently in the state most favourable, so far as their calibre was concerned, for transmitting the current of blood. If the irritation was still continued, the minute vessels became choked with closely packed corpuscles.

Subsequent experiments, with a variety of other irritating agents, showed that the corpuscles, both red and white, were obstructed in their progress through the irritated part, in consequence of their tending to adhere, in an abnormal degree, to one another, and to the walls of the vessels. The effects upon the blood were always similar, although the means employed to produce irritation were exceedingly various, such as solutions of salts, mustard, essential oils, chloroform, heat, galvanic shock, mechanical violence, etc.

The irritant was generally so applied as to act only upon a small area of one of the webs, and it was found that the abnormal adhesiveness of the blood-corpuscles was, in the first instance, always precisely limited to the spot which had been thus acted on, though it frequently extended afterwards more or less to surrounding parts. At the same time, the vessels of the irritated spot did not differ materially in calibre from those in its vicinity which participated in the arterial dilatation induced by the stimulus. The exact correspondence between the extent of the irritant application and that of the effect upon the blood, showed that the latter must be due to direct action either upon the blood itself or the tissues of the web. That it was not the result of direct action upon the blood was evident from the two following considerations. In the first place, most of the agents employed to cause irritation, when applied to freshly drawn blood, either had no effect upon the corpuscles, or destroyed instead of increasing their adhesiveness. Secondly, if employed so as to act mildly on the web, they induced an abnormal condition of the blood, short of actual stagnation, though very apparent, namely, slow movement of numerous and adhesive corpuscles; and this state of things might last, although the time of operation of the irritant was often limited to a few seconds, or even a still briefer period. Long after all the blood which could possibly have been directly acted on had left the vessels of the part, successive fresh portions continued to experience precisely similar changes in passing through the irritated area. Hence the author considers the conclusion to be inevitable "that the tissues, as distinguished from changes of calibre in the bloodvessels, are the primary seat of inflammation, and that the effects on the blood are secondary results of such derangement."

The remarkable fact discovered by Dr. H. Weber, of Giessen, but observed independently by the author, that accumulation of corpuscles occurs in the vessels of a part irritated, after circulation has been arrested by a tight ligature round the thigh, furnished the opportunity for careful comparison between the conditions of blood in healthy and irritated parts, uncomplicated by the effects of rapid movement. A series of experiments, conducted in this way, confirmed the conclusion previously arrived at, that the accumulation of the blood-corpuscles was simply the result of their abnormal adhesiveness. At the same time, these experiments brought out the remarkable fact that mere quiescence of the blood does not give rise to aggregation of the red corpuscles within the vessels, unless the tissues are in an unhealthy condition in consequence of irritation. It further appeared that the corpuscles never exhibit greater adhesiveness within the vessels of an inflamed part than do those of blood from a healthy part when drawn from the body. Also, the well-known adhesiveness of the white corpuscles within the vessels does not occur, according to the author, unless some degree of irritation is present, and never exceeds that which is always seen in blood outside the body. Hence the inference is drawn that the tissues of a healthy part exert an influence on the blood in their vicinity, by means of which the corpuscles, both red and white, are preserved free from adhesiveness; but that, in an inflamed part, this influence is more or less in abeyance.

This view has been confirmed by observations made on the wing of the bat. Also the comparison of drops of blood from healthy and inflamed parts in the human subject showed that, so soon as the blood was withdrawn from the vessels, the corpuscles of the former presented precisely the same degree of adhesiveness as those of the latter.

At the commencement of Section IV., "On the state of the tissues in inflammation," it is stated that "the conclusion arrived at in the latter part of the last section, that blood flowing through an inflamed part behaves itself in the same way as when separated from the living body, naturally leads us to infer that the tissues of the inflamed part are in some degree approximated to the condition of dead matter, or, in other words, have suffered a diminution of power to discharge the offices peculiar to them as components of the healthy animal frame. This inference is strongly supported by considering what common effect is likely to be produced upon the tissues of the frog's web by all the various agents known to cause inflammatory disturbance of the circulation." It is then pointed out that all these agents, though differing greatly in their nature, agree in their tendency to inflict a lesion on the part to which they are applied, and impair the functional activity of the tissues. "But, strong as are the arguments thus obtained by inference, it would be very desirable to confirm them by direct observation of the tissues. It fortunately happens that the pigmentary system of the frog is a tissue which, from its peculiar form and colour, is very apparent to the eye, so that it is easy to trace the remarkably active functions with which it is endowed, and their modifications under the influence of irritation."

The author then mentions the circumstances which led him to notice that the dark pigment of the frog presents remarkable differences of appearance at different times in one and the same animal, each dark patch being sometimes of stellate figure with minutely ramifying rays; at other times, in the form of a small rounded spot. These changes had been before observed by some German writers, who attributed the rounded form to contraction of the branching rays of a stellate cell. This, however, the author finds to be erroneous, and in a supplementary section "On the anatomy and physiology of the pigmentary system of the frog," shows that the cells never change in form or size, but that the pigment granules which are suspended in a colourless fluid are capable of being, on the one hand, attracted by a central force into a small space in the body of the cell, and, on the other hand, dispersed by a repulsive power into the minutest recesses of the ramifying rays. Both concentration and diffusion of the pigment may take place with great rapidity, implying remarkable energy in the attractive and repulsive forces, both of which appear to reside in a nucleus. The supplementary section concludes with some remarks on the physiological importance of the actual observation of such attractions and repulsions in one of the animal tissues.

The paper continues with an account of an experimental investigation into the effects of irritants upon this function of the pigmentary system. Many experiments are related, all tending to support the general proposition, that "all agents, without any exception, which have the power of inducing accumulation of corpuscles and stagnation in the bloodvessels when applied to the web, paralyze at the same time the functions of the pigment cells." It is also shown, from experiments upon amputated limbs free from blood, that this effect is independent of the state of the circulation. In cases of slight irritation, in which the blood resumes, after a while, its natural characters (resolution taking place), the paralysis of the pigment cells is only temporary. "Thus the pigmentary system of the frog is a remarkably sensitive index of the condition of the affected tissue, and it is fortunate that its physical characters render it so easy to read its pointings. . . . The only other tissue of the frog's web, the functions of which can be observed by the eye, is that of the arterial muscular fibre-cells," and it is found that arteries, passing through an inflamed area, lose their power of contraction within the limits of that area, whereas the same vessels may be often seen to contract in other parts of their course.

"Thus, direct observation of the structures of the frog's web which discharge functions apparent to the eye, furnishes unequivocal support to the inference derived from other considerations, that in inflammation the tissues of the part, the primary seat of the affection, are in a state of diminished functional activity."

The "conclusion" consists of an inquiry how far the views expressed in the paper, regarding the early stages of inflammation, harmonize with the more advanced phenomena of the morbid process, and with other facts of pathology. —*Edin. Med. Journ.*, Jan., 1858, from *Proceedings of Royal Society of London*, June 18, 1857.

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31. *Successful Deligation of the Subclavian Artery for Axillary Aneurism.*—Wm. Pirrie, Regius Professor of Surgery in Marischal College, Aberdeen, records (*Edinburgh Med. Journ.*, March, 1858) an interesting example of this.

The patient was a man of sanguine temperament, about 51 years of age, whose habit of body was full, approaching to obesity, and his neck short and thick. The swelling was of an oval form, pretty distinctly circumscribed, and extended from the axilla to near the clavicle, which was considerably pushed upwards, and could not be pressed downwards without causing uneasiness. By extending both downwards and forwards, the swelling had caused the hollow in the axilla to disappear, and its anterior fold to rise forwards. The swelling was slightly compressible; it had a whizzing bruit, and pulsation of a distensile, eccentric, and expanding character, which raised the hand, when laid upon any part of the tumour, by a distinct impulse from within. The pulsations were arrested by pressure upon the subclavian artery, which, however, caused great pain, and it was evident that the moment the pressure was removed, the swelling suddenly became enlarged.

The patient's history of the case was, that he had felt uneasiness in front of his left shoulder for several months; that, on the 12th of November, the parts in that region were suddenly and violently strained; that on the 26th of November, while in the discharge of his duty as a criminal officer, and endeavouring to secure a prisoner, he was, in a severe struggle, violently dashed upon the ground; that he felt excruciating pain in his armpit while falling, and when he fell, received on the front of his shoulder the whole weight of the person he was attempting to secure; that he became quite sick from the violence of the pain; that he was unable to move his arm for three or four days, and very soon discovered swelling and pulsation in his armpit.

The patient being of a very plethoric appearance, he was put upon a somewhat restricted diet, and enjoined the use of a mild saline aperient. After continuing this for a sufficient length of time, Mr. Pirrie, with the aid of Profs. Ogston and Lizars, proceeded to tie the subclavian, Dr. Ogston taking charge of administering of chloroform.

The operation being on the left side, the clavicle being pushed upwards, the patient being of a full habit of body, and the neck being very short, all tended to increase the depth of the vessel at the point of deligation; but, notwithstanding its great depth, the artery was exposed without any difficulty, and a common aneurism needle placed under it, every part having been most distinctly visible it was desirable to see; and, what is also very satisfactory in such an operation, no part was brought into view not wished to be seen. The instant the ligature was drawn tightly, both assistants simultaneously pronounced the pulsation stopped in the aneurism. When the outer edge of the anterior scalenus muscle was exposed, the inner portion of the brachial plexus was brought into view; but as the muscle was seen proceeding further downwards, there was no danger, in this instance, even before using the finger to feel for the tubercle of the first rib, of mistaking that portion of the plexus for the artery. The patient continued as well as could be desired, until the morning of the fourth day after the operation, when he was observed to be slightly confused. On the succeeding night he became exceedingly so; slept none; required two attendants to keep him in bed, and notwithstanding their efforts to prevent him, he tore the dressings from the wound, but fortunately did not get hold of the ligature. On the morning of the fifth day, he was still sleepless, restless, and agitated; expressed himself as anxious to escape from strangers and enemies he fancied in his room; his thoughts were troubled; he looked suspiciously to the back of his bed; his skin was damp, his pulse soft, and his tongue moist and creamy. This assemblage of symptoms led to a most searching inquiry into the patient's history, and from the members of his family, it was learned that, two years previously, he was addicted to intoxication, and that, until ten days before the operation, he always had a glassful of whiskey every morning, which they called his morning dram, and two, or perhaps three, in the course of the day. Professors Ogston and Pirrie then advised that he should have a wineglassful of whiskey, morning, noon, and evening, as well as strong beef-tea several time a day. He slept well next night, and, without any other treatment whatever, every unpleasant symptom disappeared, and since, the patient has gone on as favourably as possible. It was only when symptoms of a very alarming character presented themselves that it was possible to arrive at a correct knowledge of the patient's habits, and the discovery filled Professor P.'s mind with the greatest possible apprehension of fatal hemorrhage at the period of the separation of the ligature. In the above described circumstances, he scarcely dared to hope for the desired action going on at the deligated portion of the artery. The ligature, however, came away on the seventeenth day after the operation, without hemorrhage, and none has ever occurred. Three weeks after the ligature came away, the wound was perfectly cicatrized. There never was any return of pulsation in the aneurism, which is now consolidated, as well as considerably reduced in size. This case may, therefore, be added to the list of successful instances of tying the subclavian artery.

"Facility," says Prof. P., "in the performance of this operation is greatly promoted by a free external incision, and safety, by having the deep portion of the wound as circumscribed as compatible with the distinct application of the point of the aneurism-needle to the outer coat of a very limited portion of the artery. Except at the point of application, the artery should be disturbed only to the extent unavoidable by the track of the needle. In all deligations of vessels, the least possible separation from surrounding connections is absolutely necessary to diminish the risk of hemorrhage; but in this operation, it is important in lessening the risk of inflammation in the chest, the seat of which is the pleura or pericardium, or both: a more frequent cause of death than even hemorrhage after tying the subclavian. The cellular tissue surrounding the artery is the structure between it and the upper part of the pleura, and the less this is disturbed, the less will be the danger of inflammation arising in it and spreading from it to the pleura. This case will make 48 recorded examples of this operation, and the importance of the view just stated must be evident, when it is mentioned that 24 of the patients lived and 24 died, and that the principal causes of death were, in the order of frequency, inflammation within the chest, suppuration in the aneurismal sac, and hemorrhage."

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32. *Rupture of External Iliac Artery; Ligature of Common Iliac Artery.*—Mr. A. M. Edwards records (*Edinburgh Med. Journ.*, Jan., 1858) the following interesting example of this:—

"On June 19th, I was brought, by Dr. Brodie, to see Donald McDonald, a discharged soldier, æt. 27, of sanguine temperament, muscular and well formed. He had been discharged, on account of deafness, from a Highland regiment, in which he had served during the Crimean campaign, and in which he had twice attained the rank of sergeant, and been as often reduced to the ranks for drunkenness. Three months ago, he remarked a tumour, the size of an apple, pulsating in his right hypogastrium, and within the last few days, has been troubled with pain and swelling of the right foot and leg, which he thought was brought on by the long distances his scanty supply of money obliged him to travel on foot. On the morning of June 18th, the pain in his groin was more severe, and he was bathing the part with cold water, when he suddenly felt something give way in his abdomen, and the pain greatly increased, while, at the same time, there was a sensation of warm fluid flowing towards the seat of pain. Dr. Brodie was quickly on the spot, and found him with a cold surface and a scarcely perceptible pulse, very faint, and apparently dying from internal hemorrhage. He rallied, however, and with the view of lessening the arterial impulse, and the likelihood of a recurrence of the bleeding, Dr. Brodie prescribed tincture of aconite, perfect rest and quiet, with abstinence from stimulants and animal food. There was now a distinct tumour, extending upwards from Poupart's ligament towards the level of the umbilicus, with no defined limits, but distinct pulsation. The patient complained of intense pain and tension of the abdomen. He lay quiet for several hours, when he suddenly expressed a wish to micturate, and, when attempting to do so, fainted. He again rallied, and the remedies were continued.

"I saw him about noon, the following day, with Dr. Brodie, who I found was of opinion that the tumour was an iliac aneurism, and that Drs. Coldstream and Littlejohn were also of this opinion; but as none of those gentlemen had seen the tumour before its outline became diffused, they could not determine as to its exact situation. As it was clear, however, that wherever the aneurism might be, it had burst, and the man was likely to bleed to death, I informed Dr. Brodie that, with his concurrence, and if urgent symptoms again set in, I should have no hesitation in putting a ligature round the common trunk, as that, though a desperate remedy, alone gave the poor fellow a chance of life. He was in great agony, begged that a cut might be made to relieve the tension, and even volunteered to do it himself if we had any hesitation. But towards the afternoon, the pain abated, and he dozed a good deal, so we contented ourselves with the aconite, and rest. When, at 9 P. M., he again complained of severe pain, and the tumour considerably increased in size.

"At 8 A. M., the following morning, we found him evidently much weaker, with a small, frequent pulse, and complaining of great pain. The tumour now extended from Poupart's ligament below to the last rib above, then crossed upwards and inwards to the umbilicus, curving to the left of the middle line down again to the pubes. The skin covering the tumour was red and tender, and the abdomen distended with flatus. Dr. Brodie administered chloroform to the patient, and we then lifted him from his bed to a table placed in front of the window, his head and shoulders raised on pillows, and his legs hanging over the end of the table. Dr. Brodie kept up the anæsthesia, and Mr. Lizars, Mr. Mackinnon, and Mr. Nunn, were good enough to assist me.

"I began by making an incision, which curved forwards from above Poupart's ligament a couple of inches internal to the anterior superior iliac spine, as far as the last rib dividing the external oblique. The internal oblique now appeared bruised, and, as it were, injected with blood, which gave it the appearance of unusual thickness, so that I almost doubted, at one time, whether I was not dividing the transversalis with it, but a branch of the deep circumflex, and the ilio-hypogastric nerve, the white line of which contrasted well with the purple colour of the muscle, showed me where I really was. So I tied the arterial twigs, as it was necessary to economize blood, and divided the transversalis fascia. The peritoneum now appeared, covered with purple stains, as the surface of the bowel sometimes is in a hernial sac. It was but slightly adherent to the tumour, and I commenced peeling it off, Mr. Nunn, with his fingers in the wound, endeavouring to support it with the intestines, and so give me more room to manipulate. I greatly prefer the fingers to any description of spatula, for such a purpose. It was impossible to determine the limits of the tumour, which evidently occupied the whole right iliac fossa, and extended more to the left than I imagined, from external examination. It was clear that I must get at the artery through this superincumbent mass, or not at all. So I passed my finger through the thin covering of cellular tissue, and found the mass consisted of recent clots, the escape of which I endeavoured to restrain with the right hand, while I tried to 'touch bottom' with the forefinger of the left, but every now and then a clot would slip past my finger, followed by a little blood. I took the umbilicus as my guide, but for some time could feel nothing but clots wherever my finger passed up or down, or to one side. But I knew I could trust its familiarity with the parts, and that the least touch of any fixed point would at once guide it to the vessel. At last it touched what I took to be the fourth lumbar vertebra, and in another instant it was resting on the common iliac artery. Being now in a position to control the bleeding, I turned out the clots with my right hand, and got the right forefinger also to the artery, the sheath of which I picked with my nail, and cleared it for about the breadth of my finger-tip. There was a good deal of difficulty in passing a ligature round it, as the intestines, being distended, so forced the peritoneum into the wound, in spite of Mr. Nunn's efforts to restrain it, and got over the handle of the aneurism needle, so as to prevent my elevating it. I managed, at last, to get a silk thread round the artery, tied it, and then holding the ligature in one hand and lifting the peritoneum with the other, I could see, for the first time, and show to those present, the common iliac trunk pulsating violently. It was uncovered for about one-fourth of an inch, and looked white and healthy. The vein I did not see; the ureter was adhering to the peritoneum.

"The wound was stitched up, and dressed with wet lint, and the patient laid upon his back in bed. The operation lasted about half an hour. The leg was wrapped in cotton wool. Shortly after his return to bed, the pulse rose to 100.

"At 2 P. M., he was easier than he had felt for some time; had no pain; right leg colder than the left. A tumour still remains above the right Poupart's ligament, about the size of an orange, but there is no pulsation.

"*June* 21. Continued comfortable till 2 P. M., when he complained of tenderness of the belly, and there is tympanitis, with rapid pulse. ℞.—Calomel gr. ij; p. opii gr. ss; to be taken every two hours. Under this treatment, the symptoms of peritonitis abated.

"22*d*. The right leg has recovered the temperature of the other, but no pulsation is perceptible in any of its arteries. A rusty-coloured fluid escapes from the wound. There is no abdominal tenderness. The bowels have been freely opened by an enema. He continued to improve till June 26th, when, towards evening, he became much excited, imagining that the room was full of Russian soldiers. An opiate was administered; but he spent a sleepless night, and was evidently in a state of delirium tremens. From the time of the operation, we had supplied him well with stimulants, dreading such an attack. from his previous drunken habits, in his present debilitated condition. I sought the advice of Dr. Seller, who prescribed a drachm of the solution of morphia, which was administered immediately, and gave the patient a sleep of five consecutive hours, after which he awoke, calm, and free from delirium. The wound partly healed by first intention. but the central part continued open, and discharged decomposed clots. He continued, however, to gain strength up to July 2d, when he had an attack of diarrhœa, which lasted two days.

"*July* 6. Sixteen days from the operation, the ligature came away. He now seemed in a fair way of recovery, and, as my health obliged me to leave Edinburgh, I gave him into charge of my pupils, Messrs. Nunn and Mackinnon, gentlemen to whose kindness I have been much indebted on many occasions. Dr. Brodie was good enough to assist with his advice. From Mr. Nunn's notes, I find that the patient continued well up to July 10th, the edges of the wound granulating, and the discharge healthy; but about this time, he became very weak, and there was a slight oozing of blood from the wound. He continued, without apparent cause, to lose strength for a day or two, when he seemed to rally, and regain his spirits and appetite.

"On the 15th of July, Mr. Nunn dressed the wound at noon; the patient seemed decidedly better, and the wound healing; but he had scarcely left the house, when the patient, expressing a sudden desire to make water, started up in bed, and, with an exclamation of alarm, fell back on the pillow. The nurse, on turning down the bedclothes, saw blood gushing from the wound. Mr. Nunn was immediately recalled, but, of course, no further effort to save the man's life was possible, and death ensued in about five minutes.

"My friend and late colleague, Mr. Paull, now of Sunderland, was good enough to examine the parts twenty-four hours after death. He describes the wound, and its neighbourhood, as presenting a healthy appearance. The peritoneum was thickened, and of a dark colour, more or less adherent to the intestines, which were covered here and there with lymph. The intestines being removed, the common iliac trunk was exposed, with the ureter crossing it. At the point of deligation, which was about half an inch from the bifurcation of the aorta, the common iliac artery was divided, the two ends lying about an inch and a half apart, but united by cellular tissue, and each end, as Dr. Brodie, who was present, informs me, tapered to a point. On tracing the distal portion, which was firmly plugged, an aneurism, as large as an orange, was found upon the external iliac artery. This was covered with recent blood, which, on being removed, was found to cover a rent extending nearly the whole length of the aneurismal wall. All the gentlemen who saw the parts at the *post-mortem* examination concur in the opinion that the hemorrhage was from the rent in the aneurism, and not from the ends of the artery. Unfortunately, owing to the watchful opposition of the friends, the parts were so injured in their clandestine removal that but little satisfactory evidence can be obtained from the preparation. I should be much inclined, if called upon to operate again under similar circumstances, to place a ligature beyond the aneurism, as well as on its proximal aspect, and I regret much not having done so on this occasion.

"I have laid this case before the profession because, although the common iliac trunk has been tied eight or nine times since Mott operated successfully upon Israel Crane, in 1827, still there are some features in this case which I cannot help considering of peculiar interest. The condition of the aneurism at the time of operation: it was not one which might have gone on for months or years, without proving necessarily fatal, but it had already burst, and the external iliac artery was pumping its blood into his abdomen. Though the result of the operation was ultimately unsuccessful, still death was delayed for twenty-four days, and most of this time he was in comfort, and suffered no great amount of pain. He had, during these twenty-four days, an attack of peritonitis (the peritoneum was not injured in any way except by the violence of the blood gushing from the aneurism), and also he underwent a severe attack of delirium tremens; his previous habits made him a most unfavourable subject for any operation, and it is only surprising he survived so long. Then the operation was one of peculiar difficulty, and one for which no set rules could be laid down. I have often demonstrated the various proceedings for ligature of the common iliac on the dead body, and have read with admiration Sir Philip Crampton's graphic description of his operation, but I must confess the one I have just related bore but little resemblance to any of them; for, instead of the parts being as distinctly visible as on the dead body, I could see nothing, after I got through the abdominal wall, save clotted blood and discoloured peritoneum; the former I dared not remove till my finger was on the vessel, as the blood threatened to gush out on the least removal of the pressure, and the latter required great gentleness in handling, lest it should be scratched or torn, and thus fresh danger added to the many already existing. But the artery was reached without any disturbance of the surrounding parts, or exposure of the vein; and I make this observation to illustrate the necessity of what I have long endeavoured to inculcate in the dissecting-rooms, that to be a useful anatomist, you must be able to recognize and appreciate parts by touch as well as by sight, and that you can only acquire this power by constant practice, not only in the dissection of the dead body, but in manipulating and fingering carefully all its tissues, without looking at them, as a blind man reads with the tips of his fingers."

33. *Historical Critique on the Cure of Popliteal Aneurisms by Digital Compression; with reference to several Communications made to the Société de Chirurgie.* By AR. VERNEUIL.—Since the publication of the valuable work of our excellent friend, M. Broca[1], the question of the treatment of aneurisms has been reopened, and compression has resumed a pre-eminence it ought never to have lost. Perhaps this is, to a certain extent, to be attributed to the legitimate crusade waged with so much ardour against the surgery of the knife. However this may be, the Société de Chirurgie has latterly had the good fortune to receive three reports of aneurisms cured by compression performed with the fingers.

We had lately announced the communication of M. Vanzetti, of Padua; at the same time, a work by M. Michaux, of Louvain, containing a similar case, reached the Society: so that we shall, without further delay, proceed to bring the subject before our readers.

With reference, first, to the new facts: it occurred to M. Vanzetti, who had seen compression employed in Dublin, in 1843, to substitute, for the mechanical means there used, the hand of several successive assistants. In 1846 he made a trial of this mode at the Hospital of Kharkoff, in Russia, conjointly with M. Serebriakoff, surgeon to the hospital. He himself instructed the persons intrusted with the maintenance of the compression as to the place and manner in which it should be employed. The compression was kept up for two days, but without effect. The patient was operated on by ligature.

Eight years later, in 1854, M. Vanzetti received under his care in hospital, at Padua, a mason, aged about 36 years, of tolerably good constitution labouring under a well-marked, though medium-sized, popliteal aneurism.

The pulsation ceased as soon as the femoral artery was compressed. M. Vanzetti resolved to employ compression; but, discouraged by the failure just alluded to, he tried a great number of compressors, with much patience on his part, and much inconvenience to the sufferer. Before resorting to tying the femoral artery, he wished to try digital compression once more, in the hope that, under his immediate superintendence, it would prove more successful. Several assistants—seated or standing, sometimes with one hand, sometimes with both hands placed one over the other—compressed the artery with *a very moderate force*, sufficient to bring the walls of the artery together, but without inconveniencing the patient. The situation chosen was the middle third of the thigh, in order that the profunda artery should not be obliterated.

At the end of twelve hours there was considerable diminution of the expansive movements of the tumour. At the end of forty-eight hours there was no pulsation, nor could any bruit be heard, and the compression was withdrawn.

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[1] Des Anévrysmes et de leur Traitement. Paris, 1856.

There was no relapse. The tumour in the ham gradually disappeared, and, at the same time, the leg became straight again. This man has resumed his occupation; he walks without limping, and experiences no inconvenience in the movements of the knee.

The second case is still more remarkable. In 1855, a very intelligent officer, aged 27, consulted M. Vanzetti for a popliteal aneurism of the right side. The employment of digital compression was resolved on, but was deferred for twenty days. During this period the patient himself made compression, the action of which had been explained to him. The tumour, which was of small volume, seemed to diminish even under the influence of these imperfect attempts.

The real treatment was commenced at noon, and was confided to six intelligent and reliable assistants. At 6 o'clock, M. Vanzetti returned to see what state things were in. The patient was fast asleep; not one of the assistants was with him. Great was the surgeon's surprise; greater still was his astonishment when he learned that after FOUR HOURS of careful compression, *the aneurism had become still*, and that its pulsations had completely ceased! Accordingly, at 5 o'clock, that is, an hour after, the assistants had withdrawn. The patient remained at the Clinique for a month. He was seen again several months later; there was no lameness, and the movements of the limb were free. The aneurismal tumour was converted into a solid nucleus of the size of a filbert.

Such are the facts furnished by the Paduan surgeon, and which he has put forward with the most remarkable clearness. M. Marjolin, in his turn, has communicated two cases reported by M. Michaux, of Louvain, one of the most distinguished of foreign surgeons. The first is a long chirurgical drama, commencing with double and intermittent compression, and ending with amputation of the thigh, rendered necessary by gangrene of the limb after ligature of the femoral artery. This case is one of great interest; but as it does not bear directly on the point under consideration, whe shall not further allude to it. The details may be found in the Bulletins of the Society.

The following is a succinct analysis of the second case:—

A man, aged 50, of good constitution, who had always enjoyed excellent health, complained, for the first time in 1851, of rheumatic pains in the left thigh. In August, 1856, the patient discovered, at the anterior and inner part of the thigh, a pulsating tumour, situated nearly two and a half inches from the crural arch. Its progress was rapid, for in the month of November it measured five and a half inches in its transverse and four and a third inches in its vertical diameter. It presented very distinctly all the signs of aneurism. The complete examination of the patient denoted a general alteration of the arterial system; abnormal sounds toward the centre of the circulation, and a rather rough souffle in all the large arteries. The other functions were tolerably well performed.

What treatment was to be adopted? If ligature was to be employed, it should be applied to the external iliac, always a serious operation, especially when the vessel is altered. On the other hand, alternating compression with two pads was not compatible with the very high situation of the tumour. M. Michaux decided on making single compression on the ilio-pectineal eminence, with the small pad of M. Broca's apparatus. The treatment was commenced on the morning of the 28th of November; the compression was to be intermittent, that is to say, every four or five hours the apparatus was to be loosened to allow the patient to rest. The next day, the severity of the pain rendered it necessary to suspend the compression for four hours. On the 30th, a vesicle had formed on the surface of the compressed skin; the pressure was again suspended for four hours. The pad was placed a little lower; compression was alternately suspended and re-established, until the 2d of December, as the presence of vesicles indicated the formation of an eschar.

During these four days the pain had been extremely severe, especially in the loins and in the heel. There was complete want of sleep, notwithstanding the employment of opium; the patient was very much fatigued, and nevertheless the tumour had diminished in size, and had become hardened; on several occasions, when the permanent compression had been prolonged for four or five hours, the pulsations had disappeared. M. Michaux then thought of using digital compression; by good fortune, a portion of sound skin remained within the eschar, where the application of the finger was sufficient to arrest the pulsations. The pupils of the hospital applied themselves to the task with the greatest zeal, on the 5th of December, at half-past 9 in the morning; the compression was to be total; the pulsations of the artery being energetic, tolerably strong pressure was necessary to obstruct the vessel.

Compression was very painful on account of the vicinity of the eschar. In the afternoon, œdema, tingling, numbness, and rigidity of the limb were present; the feet became cold; there was complete want of sleep, as well as acute thirst, intense fever, and violent colic, at 2 o'clock in the morning; but the tumour became perceptibly solidified; the pulsations diminished; soft clots filled the sac. The local improvement continued without interruption; at 9 o'clock in the morning, twenty-four hours after the establishment of the digital compression, the pulsations and the bruit de souffle entirely ceases. The arteries no longer pulsated below the aneurism, but above it, on the contrary, the commencement of the femoral pulsated strongly.

As a matter of prudence, the compression was kept up until 2 o'clock in the morning; it was then interrupted for half an hour, to afford some respite to the unhappy patient, after which it was resumed until 9 o'clock in the morning, to be finally given up.

I stop here to impress more forcibly the mind of the reader, and I pass in silence over the details of the general treatment, which was very ably conducted during all this period, as well as during convalescence. On the 14th of December the eschar separated; it involved the entire thickness of the skin. On the 16th of January the wound had cicatrized. On the 24th the patient left the hospital perfectly cured. The aneurismal tumour was very hard; it is still of a tolerably large size (two inches by two and three-fourths), but the cure is no longer doubtful.

Did they stand alone, the remarkable cases just reported would suffice to commend digital compression strongly to the attention of surgeons. What objection can there be to a proceeding which cures popliteal aneurisms in five hours—even in forty-eight hours; a considerable aneurism of the femoral in twenty-four hours? What, without digital compression, would have been the fate of M. Michaux's second patient? Let us observe that, in two cases, no resource remained but the ligature; the insufficiency of compression by means of apparatus was palpable. If M. Broca had had these facts before him when he was preparing his book, he would certainly have modified the chapter he has devoted to the operative proceeding we are speaking of. Without tracing, step be step, the history of digital compression, we may be permitted here to discuss with our learned friend some of the propositions he has announced in his book.

While he considers digital compression to be "a very valuable resource," M. Broca regards it as a means which we must reserve for the following cases:—1. When the deviation of the limb does not permit us to act efficiently on the artery by means of mechanical apparatus. 2. When excessive irritability of the skin is opposed to every other species of compression.

Now, the latter condition alone existed, and in but one of the three cases above quoted. The two other cures show that it is advisable to enlarge the scope of the process. On further consulting the facts collected in M. Broca's book, I find another very remarkable case, that of Mr. Greatrex. The alternating employment of a compressor *and of the patient's fingers* put a stop to the pulsations at the end of twenty-four hours.

In a case of Mr. Knight's compression with apparatus could not be borne for more than an hour. Forty hours' continuance of digital pressure on the pubis was sufficient to insure a cure.

To crown the work, we have the curious case of the patient under Mr. Colles' care, who cured himself by keeping up for seven days a digital compression, which was necessarily very imperfect.

It is far from being my intention to conceal the tolerably numerous failures of this process. But, on the whole, what have we lost when we have failed? Nothing; even when the means employed prove unsuccessful, as happens also occasionally with compression by apparatus. It appears to me that digital pressure has been less painful for the patient than the latter, which may then be advantageously substituted for it.

For my part, notwithstanding the constantly progressive improvements of apparatus, which, according to M. Broca, render the cases very rare in which digital compression is indicated, I consider, with him, that it constitutes the type of the method, and that consequently it is only in extreme cases that we ought to draw back from the difficulties of its application. In common with M. Michaux, I can scarcely doubt that, in the immense majority of cases, we should be able to find the devoted co-operation of a sufficiently large number of assistants to take part in an enterprise as noble in a humane, as it is interesting in a scientific point of view. Hitherto digital compression has most frequently been employed only after mechanical compression. I think that, hereafter, we should proceed in exactly the inverse direction, and, when compression is indicated, commence with the pressure of the fingers before having recourse to a less gentle process.

Perhaps it will not be uninteresting to take a rapid survey of the cases of aneurism in which digital compression has been employed, whether alone or combined with mechanical pressure.

These trials, in number seventeen, include seven unsuccessful and ten successful cases. I shall add some explanatory remarks on the two categories.[1]

Failures.—Four times compression was employed primarily—that is to say, before any other means. A. Popliteal aneurism; two days' compression; ligature (Vanzetti). B. Popliteal aneurism; four hours only, then mechanical compression for six days (Jameson). C. Diffused aneurism of the femoral; sixty-two hours; apparent cure, which proved not permanent; seven days' compression with a weight on the groin; decisive cure (Parker). D. Popliteal aneurism; digital compression maintained by convalescent patients for three days; mechanical compression, previously intolerable, was rendered possible; a cure was obtained (Monroe, J.).

In two instances, digital compression was not employed until after the insufficiency of apparatus had been demonstrated, and their use abandoned: E. Diffused aneurism of the ham; sixteen days of mechanical compression; ninety-four hours of digital compression, at the end of which the pulsations and the souffle had disappeared; the success was not permanent; amputation; death (Nélaton). F. Popliteal aneurism; employment of bad apparatus for five days; twenty-four hours of digital compression; ligature; amputation; recovery (Norgate). G. In this instance, both modes of compression failed, but the case was one of inguinal aneurism; compression with the fingers was kept up during four days and four nights; the tumour was greatly ameliorated; the tourniquet having been applied, subsequently produced an eschar; the external iliac artery was tied (Fox).

In these seven cases of failure we find three ligatures subsequently applied, A, F, G; and two amputations for gangrene, E, F. Two ligatures were successful, A, G. One of the two patients subjected to amputation died. Three times, on the contrary, B, C, D, mechanical compression was followed by cure. Even when digital compression had to be abandoned, it modified the tumour advantageously in two cases, C, E. In a third, D, it singularly promoted tolerance of the apparatus.

Let us proceed to the—

Successful Cases.—Two belong to digital compression, employed primarily and alone: H. Popliteal aneurism; five hours were sufficient (Vanzetti). I. Colles's patient, who, without assistance, cured himself in seven days of popliteal aneurism, by intermittent, and, of course, very imperfect compression.

Three times digital compression succeeded when mechanical compressors were inapplicable, or abandoned: J. Femoral aneurism; mechanical compression for four hours; after twenty-four hours digital compression produced a cure (Michaux). K. Popliteal aneurism; various apparatus were tried for a long time, and were given up; forty hours of digital compression (Vanzetti). L. Apparatus intolerable; forty hours afterwards, the employment of the fingers; cure (Knight).

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[1] In M. Broca's work details relating to these facts will be found. I have given only a very brief analysis of them, distinguishing the cases by letters and the names of the observers.

Four times the pressure of the fingers having been combined with the use of the tourniquet, it is difficult to award to each method its due share of merit. This method, which is equivalent to double and alternating compression, has further produced results so rapid and decisive that, perhaps, we ought to dwell on this combination, which would singularly relieve at once both the patient and the surgeon.

M. Popliteal aneurism; tourniquet below the groin; the patient's finger pressing on the pubis; at the end of twenty-four hours, cure (Greatrex). N. Popliteal aneurism; digital compression on the pubis; below, Dupuytren's compressor; alternating action, forty-eight hours; recovery. O. Same lesion; same mode of proceeding; sixteen hours were sufficient for the cure (Wood). P. The following case, by Mr. Tufnell, is more complicated; in it, however, we find a combination of several modes of compression: Very voluminous popliteal aneurism; compression, according to Bellingham's process, for two days; suspended on account of swelling of the inguinal glands; digital compression on the pubis by the patient and a neighbour; tourniquet acting inferiorly, and alternating with the action of the fingers; the whole kept up for twenty-four hours; the pubic weight[1] was then employed; cure at the end of seven days.

Lastly, in the following case, digital compression having been employed conjointly and alternately with apparatus and the direct compression of the tumour, it is difficult to assign to it a precise part in the case: Q. Arterio-venous aneurism of the bend of the elbow; direct compression on the tumour for several days, then indirect compression with the tourniquet, which could not be borne; digital compression kept up by the patient, and suspension of every other means; resumption of direct compression on the tumour; digital compression was made by assistants for twenty hours, and then abandoned; it was intrusted to the care of the patient alone; finally, some days after, the aneurism was cured (Nélaton).

We should have more than one remark to make on all these interesting cases, and, in particular, on the place where it is advisable to apply the fingers in cases of popliteal aneurism. Perhaps we should adopt the situation chosen by M. Vanzetti; but this discussion would carry us too far.

In the present state of the question, we may safely announce the following propositions:—

I. Indirect digital compression, continuous, and even intermittent, performed by the able hands of assistants, or by the patient, has succeeded alone, and without the previous or subsequent assistance of any other means, in curing aneurisms.

II. Associated with the tourniquet, and alternating with it, it has produced cures both rapid and extremely simple. In general, when success is to crown the attempt, it does not tarry.

III. Employed alone, it has cured aneurism when mechanical compression was impracticable, or had to be abandoned; much better borne, in fact, than the latter; digital compression may be applied on points where the skin is already inflamed.

IV. "This compression is the most efficacious and least dangerous of all; it enables us to act only on the artery, avoiding the nerves and neighbouring veins, and sparing the skin."—*Broca*, p. 807.

V. Digital compression may fail; but in this case it most frequently modifies advantageously the state of the aneurism.

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[1] A conical weight of lead, varying in amount from four to nine pounds, as may be necessary efficiently to compress the artery, where it is superficially situated in the groin. See *Practical Remarks on the Treatment of Aneurism by Compression*, by Jolliffe Tufnell, M. R. I. A., &c. Dublin: Fannin and Co. 1851.—Translator.

VI. We are justified in believing that, alone, it would have succeeded more frequently if it had been practised with more perseverance and regularity than were employed in the above quoted cases.

VII. Never, so far, has any accident been attributable to this proceeding.

VIII. Having been applied successfully, for the first time, by Saviard, subsequently to an operation for aneurism after the old plan, indirect digital compression is essentially of French origin. Hitherto it has not received all the extension and generalization of which, in my opinion, it is susceptible.—*Dublin Quarterly Journ. Med. Sci.*, May, 1858, from *Gazette Hebdomadaire*, Oct. 30, 1857.

34. *Popliteal Aneurism cured by Pressure in twenty-six and a half hours.*—T. A. Cusack, Esq., reports (*Dublin Hospital Gaz.*, March 15) an interesting example of this. The subject of it, a tall, thin man, of good general health, aged 38, was admitted into Stevens' Hospital, under the care of Mr. Wilmot, Oct. 27, 1857.

Nine weeks before admission, while shoeing a horse, he received a severe strain in the right leg, from the animal making a sudden movement while the hoof was against his knee. He was thrown to the ground by the blow, but was able to go on with his work presently, and did not think much of the injury until the next day, when, after walking a mile, he found that the right knee had become stiff, and that there was a swelling behind the joint.

He continued to walk about for two days more, when a pulsating pain set in in the part, which obliged him to keep his bed for a month, by the end of which time this pain and the swelling had so far subsided that he was able to walk about a little, but could not take any active exercise, or return to his trade.

Up to the period of his admission, there has been but little change. His chief complaint now is, that any attempt at walking, or moving the limb, is followed by increased pain and swelling. He sleeps well at night, but feels a little pain in the day; otherwise he appears in excellent health. His pulse is 82, and very tranquil. The tumour lies quite at the lower end of the popliteal space, being covered up by the soft parts: so that, at first sight, it looks like a tumour in the muscles of the calf of the leg. On careful examination, however, the whole of the upper portion of the calf may be observed to pulsate, and a very distinct bruit is evident when the ear is applied. The tumour itself, as felt through the soft parts, may be estimated at the size of an orange; it is of a fusiform shape, and probably engages the bifurcation of the popliteal artery. It can be nearly emptied by direct pressure. He is a spare man, and the artery can be easily compressed in the groin, so as to stop all pulsation in the tumour. The foot is slightly œdematous.

Treatment.—On admission, he was ordered small doses of the tincture of digitalis (gtt. x, every six hours), in camphor mixture; he was also put on the low diet of the hospital, and advised to use but little fluid.

October 30, 8 P. M. A leaden weight of a conical shape, and weighing five pounds and a half, having been placed on the femoral artery, in the groin, it was found that there was scarcely any pulsation in the tumour, and that he could bear this amount of pressure without much inconvenience. He was ordered a draught containing twenty drops of the liquor morphiæ, and it was hoped that he would be able to sleep with the pressure on. He was unable to sleep, but kept the pressure steadily on, except for about two hours, until half past seven the next morning, when it was removed, to allow him to sleep, having been on nine hours and a half. At half past nine A. M. (Oct. 31), the weight was reapplied until nine P. M., making, in all, twenty-one hours' pressure out of the twenty-five. The tumour had by this time become much more solid, and the anastomosing vessels on its surface remarkably distinct; the leg a little more œdematous than before; the foot kept warm by a water-bottle.

November 1, 10½ A. M. He has had a good night's rest. There is a small gland just where the pressure had been applied, which is tender; this, however, could be drawn to one side with the integuments, and the pressure was reapplied, having been increased to eight pounds, so as to stop all appreciable pulsation in the tumour. At four P. M., on removing the weight, which had been, on this occasion, applied five and a half hours (making in all twenty-six and a half hours), it was found that the pulsation and bruit did not return. The limb was warm, and he had no pain anywhere, but the tumour felt hot and tender. He was directed to keep the pressure on for six hours longer, to make sure of a perfect cure. At ten P. M., all pressure discontinued; "repeat morphia draught."

November 4. No change since last report. The limb is maintained in a semi-flexed position, on a pillow, and he is kept slightly under the influence of opium. The surface of the tumour is so covered with anastomosing arteries that it almost seems to pulsate.

9*th*. The tumour is beginning to be smaller, and the œdema of the leg is subsiding.

15*th*. The tumour had so far subsided that he could not be persuaded to remain in the hospital any longer. Nothing further has been heard of him since.

Mr. Cusack, in his remarks on this case, observes:—

"When the almost uniform success which has attended the treatment of aneurism by compression in Ireland is compared with the unsatisfactory results which have often followed a similar mode of procedure in England and Scotland, the question naturally arises whether this circumstance is to be attributed to the general principle of treating the disease by pressure or to some imperfection in the particular mode of its application. On referring to some cases which have recently been treated in this hospital, of which the above may be taken as a fair sample, I am induced to think that the nature of the pressure, and the time during which it is kept up, whether continuous or intermitting, has much to do with the result.

When the compression treatment was first adopted in Ireland, it was, I think, laid down as a general rule that the pressure should be continuous, for which purpose instruments with two pads were contrived; or one pad was placed in the groin, and another lower down on the limb; so that, before pressure was taken off in one place, it was applied in another. Lately, this plan of treatment has been very much modified, and, as in the present case, the pressure has been applied periodically.

The successful result may, perhaps, be attributed to the more healthy condition of the patient's blood, which must be obtained by a proper amount of sleep, and to the more healthy condition of the integument at the seat of pressure, which, instead of ulcerating and sloughing, as it frequently does under continued pressure, may be reasonably supposed to regain its natural state during the interval of repose.

Another conclusion to which we are led is, that when once the fibrinous deposit has been caused to commence on the interior of the aneurismal sac, it is not washed away or reabsorbed by the restoration of the circulation: so that, when pressure is reapplied, the process of solidification is, as it were, taken up where it had been left off at the cessation of pressure. Indeed, the idea has sometimes occurred to me that, once the coagulum has commenced to form, it may for a short time continue to appropriate to itself the fibrinous element of the blood, even though rapid circulation is going on.

With reference to the intensity of the pressure, it was formerly laid down that a small stream of blood should be allowed to flow through the sac, as it were, to afford material from which the fibrin may be withdrawn. From the result of my own observation, I am inclined to think that this opinion requires modification. The treatment of aneurism by compression may be conveniently divided into two stages: first, that during which the collateral circulation is being developed; second, that period subsequent to its establishment, when the coagulating process goes on with greater rapidity.

In the first of these stages, I think the former opinion holds good, and that some blood should be allowed to pass through the main artery; but once the second period has arrived, as much pressure may be applied as the patient will bear, and certainly it should be enough to keep the wall of the main artery in contact: the establishment of collateral circulation being a guarantee that the vitality of the limb will be kept up, and that blood for the formation of a healthy coagulum is present in the sac.

Lastly, the pressure in this case was effected throughout by means of a conical leaden weight, the lesser end of which, about the size of an ordinary tourniquet pad, was applied over two folds of soft leather, to the artery. To keep the weight in position, and to direct the pressure, a stiff iron wire, which has been inserted into its greater end while the metal was melted, was passed through a ring fixed in a cradle, large enough to stand on either side of his pelvis.

From the satisfactory results which have followed the use of the weight, applied in this way, I am induced to hope that its simplicity and facility of construction may render it useful in the country, where a more complicated apparatus cannot readily be procured."

35. *Fracture of the Neck of the Femur within the Capsule.*—Dr. BYANT showed to the Pathological Society, April 6th, a preparation from a case of this kind.

Charlotte F., aged 69, an inmate of the Kent County Lunatic Asylum, upon November 20, 1857, was pulled off the edge of her bed by a child, and fell upon her right hip. There was some pain in the neighbourhood of the hip-joint, but more particularly in the knee. The shortening was very trivial, and there was no eversion of the foot. The woman could partly flex her thigh, though not without pain, and there was no effusion. Some difficulty was experienced in detecting crepitus, which was accomplished, at last, by an assistant extending, and at the same time rotating the leg inwards. The long splint was applied, and kept on for some weeks; a bed-sore, however, appeared, and from this she sank exhausted, upon Jan. 8, 1858, seven weeks after the injury.

The specimen exhibited a genuine example of fracture of the neck within the capsule. The line of fracture was not direct, and upon one-half was not to be seen, unless some force were employed to separate the parts. The reparative process seemed to have progressed fairly, and if the bed-sore had not proved too much for her feeble powers, there seemed every reason to believe that perfect reparation would have taken place.—*Med. Times and Gaz.*, April 17, 1858.

36. *Resection of the Head of the Femur.* By HOLMES COOTE, M. D., Ass't Surg. St. Bartholomew's Hospital.—I performed, in the month of September, 1857, at St. Bartholomew's Hospital, the operation of resection of the head of the femur on a pallid and emaciated boy, who had been suffering from disease of the hip, of two years' duration, followed by dislocation of the head of the bone into the sacro-sciatic notch; the formation of numerous abscesses, which had left profusely discharging fistulous passages; permanent flexure of the femur on the pelvis to more than a right angle; and great distortion of the spine. The particulars of the case have already appeared in the pages of another journal, where it has been correctly recorded as one of the successful instances of the performance of this operation; and so indeed it may be termed; for the patient has since improved in health, the fistulous passages have healed up, the limb is coming into its proper position, and the curvature of the spine is lessened. But I write this to record a protest against the very operation which I have performed, being convinced that very many of the evils ensuing from hip-disease, especially in young subjects, and nearly all those which are supposed to indicate the propriety of resection of the head of the femur, are due to pressure and friction between the opposed ulcerating articular surfaces, which, by the application of proper instruments, and by a due appreciation of the value of patience, admit of removal more often than is supposed. And here I may remark, that surgeons would do well to study again the anatomy of joints, and the signification of the different ligaments. The researches of the Webers have not received due attention; nor have many subsequent monographs been read. It will not be generally believed that the thigh cannot be bent backwards on the pelvis—that it is immovably fixed when it falls in a straight line corresponding with the axis of the trunk. When the lower extremity is thrown backwards, as in the act of kicking, the movement is between the pelvis and the lumbar vertebræ. Nor does the thigh admit of much rotation outwards, the ilio-femoral ligament restraining motion in that direction. When the limb is extended on the pelvis, the articulating surfaces are firmly

pressed together; but when the thigh is bent forwards on the pelvis, and the limb is inverted and adducted, the articulating surfaces are held loosely together; and the movements are unchecked, inasmuch as the posterior part of the capsule has no direct attachment to the femur, but forms a loose fold, like an orbicular ligament. How often do we read of bending backwards the thigh on the pelvis—of its free range of external rotation! How commonly is extension, *i. e.* bringing the limb to the straight line with the trunk—practised in surgery! The first two movements are impossible without rupture of the capsular ligament; the last amounts to absolute cruelty to a patient suffering from ulceration of the bone.

To return to the operation of resection of the head of the femur: The success which I have met with in the case above alluded to gives me no desire to repeat the operation; for more mature reflection and experience, combined with re-examination of pathological specimens, have led me to conclude that many of the morbid changes, and still more of the attendant suffering, are due to the imperfect carrying out of some of the most obvious and simple principles of treatment; namely, the proper application of warmth, perfect immobility of the limb, and relief of the articulating surfaces from friction and pressure. Moreover, when the head of the bone is exciting ulceration in the acetabulum, or pain and disease, after dislocation, in the neighboring soft parts, the symptoms may be arrested, the limb may be brought into place, and the patient's health greatly improved by the application of an apparatus for extension—not forced or sudden, but slowly acting, and capable of direction in whatever way will draw asunder ulcerating and highly sensitive surfaces.

I shall be told that these principles of treatment have been long attended to. But I may question that fact. How many children, with incipient disease of the hip, have none other than their usual clothing? How often is it that the limb, somewhat colder than the opposite, has no flannel roller, nor the covering of leather or gutta percha over the joint? As for the repose of the limb, the child is daily taken from its bed to be washed and dressed, to pass its evacuations; and, among the poor, this movement goes on to a far greater extent.

I directed attention to these points in an article on Disease of Joints, which appeared in the *British and Foreign Medico-Chirurgical Review* in 1855; and I have seen no reason to change the opinion there expressed, that these points "merit, in their more complete and scientific application, greater general attention than they have hitherto received in this country."

I have not the space to enter minutely into the morbid changes in hip-disease of young subjects, concerning the origin of which so much has been written; nor to quote the opinion of those who, on the one side, say it is originally an inflammatory affection of the synovial membrane, or, on the other, that it commences in the cancellous texture of the bones. Pathological investigation shows that, however analogous the constitutional peculiarity may be in all cases, the disease does not always begin in the same way. In many cases, the inflammation of the synovial membrane goes hand in hand with a similar process in the spongy texture of the bones composing the joint; there are others in which the latter morbid changes are either absent or exist in a very slight degree. The destruction of the ligamentum teres, the exudation of pus in the bones, the ulceration of the cartilage, the separation of the epiphysis, are stages familiar to all; but the point to which I would direct attention is the following—that the more serious changes seem in great measure due to the rubbing of the ulcerated body surfaces—a process which keeps up the morbid action which is often the precursor of fatal accidents. How comes it that we sometimes find the base of the acetabulum perforated, with the head of the femur impacted in the hole (Museum of Royal College of Surgeons, No. 940); or separation of the three imperfectly united bony elements of the acetabulum, the ilium, ischium, and pubis? Is it probable that the matter, which in McDowel's case communicated with the small intestine and external iliac artery, and in R. Adams' case found its way into the vena cava inferior, would have made a passage into the abdominal cavity, had the head of the femur been prevented from rubbing against and ulcerating the acetabulum?

I cannot but think that, if care to prevent these accidents be not taken, the patient is spared some risks by the actual dislocation of the bone from its articular cavity. Preparations are to be seen in the Museum of St. Bartholomew's Hospital, where the shaft of the femur had been slowly driven into a cavity in the cancellous texture of the ilium, near to the acetabulum.

The instrument in use at the Royal Orthopædic Hospital for slowly drawing the femur, when dislocated, to its proper place, or for keeping up slow extension, combined with immobility of the limb, when the head of the bone still remains in the articular cavity, is described in Mr. Tamplin's work on *Deformities*, p. 38; or may be seen at the maker's, Mr. Fergusson, of Giltspur Street. It is fixed to the pelvis, and attached by a broad webbing strap to the abdomen. From this a steel bar passes down the outer part of the thigh, where it is fixed by a broad leather strap. Three screws at the junction of the steel bar with the pelvic band allow of three movements—1. Flexure; 2. Abduction; 3. Elongation. "The foot, leg, thigh, and hip, must first be bandaged with a flannel roller; for, unless the natural temperature is kept up, the restorative process cannot go on." (Tamplin, *On Deformities*, p. 185.)

I will add, in conclusion, that this treatment may be daily seen in practice in the Royal Orthopædic Hospital; and that I should indisputably try it, not for weeks, nor even months, but for years, if possible, before resorting again to so serious an operation as resection of the hip-joint, which, however successful in its issue, leaves the patient in a crippled state for at least an equal period of time, and which likewise shows, in a large proportion of cases, a fatal result.—*British Med. Journ.*, Jan. 2, 1858.

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37. *Excision of the Knee.*—[Mr. Humphry read a paper on this subject (March 9th, 1858), before the Royal Medical and Chirurgical Society, the following abstract of which, with the debate to which it gave rise, is of great interest as showing the present opinions of some of the distinguished London surgeons on the subject. There seems to us to have prevailed in Great Britain for a few years past quite a mania for resections, but it would now appear that more sober views were beginning to be entertained on the subject.]

Mr. Humphry's paper contained an abstract of thirteen cases operated on by the author. Of these, one (a little child in whom the operation was performed on account of acute suppuration of the joint) died; in four, amputation was required, the patients all recovering; and the remaining eight did well, retaining, or with the prospect of retaining, a useful limb in each case. In none were any severe constitutional symptoms excited by the operation, from which it might be inferred that the operation is not in itself one of much danger. Nevertheless, the processes of reparation are more difficult than after amputation; there is likely to be protracted discharge and recurrence of abscesses, etc., and therefore, when the patient is of strumous temperament, or in a very reduced state, amputation is to be preferred to resection. The results of excision are likely to be favourable in proportion as the disease for which it is performed is slight and not acute. Amongst the most suitable cases are those in which the severe stages of disease have passed by, and left the joint crippled, and the limb, consequently, useless. The cases also in which simple inflammatory disease, commencing in the synovial membrane, involves the cartilage and bones, destroying the former to such an extent as to leave little hope of a useful joint, are well suited to excision. But where the disease remains long confined to the synovial membrane, inducing great thickening and various other changes in it, the prospects of excision are less good, because the subjects of this form of disease are generally of strumous temperament, and some portions of the morbid structure are liable to be left, and so become sources of irritation and suppuration. Nevertheless, the author would not altogether decline to perform the operation in this latter class of cases, inasmuch as the remaining fragments of the diseased membrane may fall into a quiescent state and disappear, and the cases do well, provided the bones become firmly united to one another; and if the health begins to fail, the limb can still be removed. The operation is also well suited to some other cases of rarer occurrence, such as certain cases of chronic rheumatic arthritis, knock-knee in the adult, unreduced dislocation, compound fracture of the patella, etc. In performing the operation, Mr. Humphry makes a crucial external incision, takes away the patella, and dissects the soft parts away from the bones no more than is absolutely necessary for the removal of their articular ends, is careful to tie the bleeding vessels, and to secure good apposition of the cut surfaces of the bones and of the skin. The straight position and quiescence of the limb are secured by splints and bandages, which should be changed no oftener than is necessary for cleanliness. The after-treatment was very simple in all the cases related; opiates were very rarely given, and stimulants were generally avoided.

Mr. Holmes Coote said he could not agree with the author in the conclusions at which he had arrived. Thirteen cases of resection had been detailed, six of which had been followed by amputation or death. Eight were young persons, and five adults. The author stated that resection should be resorted to only in slight cases, and among these he enumerated knock-knee in the adult, cases of contracted joints, &c. He (Mr. Holmes Coote) might be permitted to state what was the result in the largest hospital in London, having 642 beds, and 389 surgical beds. There had been admitted a vast number of cases of joint disease in every possible form, but during the last twelve months there had been but ten cases of amputation, and not a single case of resection. He ventured to say, in the presence of his senior colleagues, that there was not one case of diseased knee in which any man could have ventured to perform the operation of resection with an easy conscience. Resection should be regarded in a twofold point of view, as applying to the young and to the old. In young persons the result was often surprising, whilst in grown-up patients, the varied diseases of the internal organs to which they were subjected rendered the operation far more formidable. Of the ten amputations to which he had referred, three only had been upon young subjects. One of these was a pallid little Irish boy. There was not sufficient disease to require amputation under ordinary circumstances; but as the boy's health suffered, and the lungs were diseased, the limb was removed for the purpose of restoring the general health. Had it not been for the disease of the chest he had no doubt the knee would have ultimately recovered. The next case was that of a child who had met with an accident. The third was a young girl who suffered from necrosis of the femur; the limb was removed, and the patient died. In not one case had it been deemed necessary to perform the operation of resection. It might be said that patients had probably died in consequence of that operation not having been performed; but he had gone over the list of deaths with a view of ascertaining the point, and he found that during the past year there was scarcely a case upon record in which death had occurred from diseased knee. In only one case not operated on had death occurred—the case of a child (under Mr. Lloyd) who died from phthisis. He was unable to say why no operation had been performed. He, therefore, concluded that in children diseased knees, if properly treated, and in the absence of any great cause of excitement, would in time do well. Even in adults but few deaths had occurred from diseased knee-joints. There had been two cases in the hospital during the past year, and in both the men refused amputation. He would also mention the result of experience acquired in the Orthopædic Hospital, where cases of joint disease in every form were constantly brought, many of them having been condemned by other hospitals, and the patients declining amputation. Since 1851, between 300 and 400 cases had come under the notice of Mr. Tamplin, and the idea of amputation or resection never entered his head. Most of the cases had been relieved. Between the 10th of December last and the 10th of January, he could recall six cases of children who came to the hospital with joint diseases, all of whom told the same tale, that they had been to other hospitals, and that their limbs had been condemned, some for amputation and some for resection; but he was confident that in the course of a few months they would be able to walk far better than they could with a wooden leg, or an excised joint. He did not know of a single case in which resection had been performed in the upper ranks of society.

Mr. Skey said he listened with considerable attention to the details of the various cases recorded by the author, who he fully expected would himself have concluded from the evidence he had adduced that he ought not to recommend the operation of resection to the Society. There were thirteen cases and five amputations! Had the author calculated that five amputations out of thirteen cases of resection amounted to something like thirty per cent. of failures? Were they in the habit of recommending any operation which exhibited such an enormous proportion of failures? He considered that the inventor, as well as the modern re-introducer of the operation of resection had great claims upon the acknowledgment of the profession, because he considered the operation to be a great invention or discovery, which might be subservient to the most important uses in the restoration of limbs. But the question was not whether, by sawing off the extremities of a bone, and bringing the two surfaces into contact, a useful limb might be retained; but the question was, who should determine when such an operation should be performed? The author had alluded to a "judicious selection of cases." He might refer, however, to the statistics mentioned by Mr. Coote, showing that St. Bartholomew's Hospital, in the course of the last five years, had produced no aggregate equal to that of the author alone. Another striking fact was, that these remarkable cases of excision came from comparatively few quarters, and were not spread over the whole of the profession. It could not be said that one practitioner had three cases and another five; but twelve cases came from one surgeon, fifteen from another, and fourteen from another, the whole number being confined to a few persons with whom the practice appeared to be the rule rather than the exception. It behooved the authorities of the profession to stand forward and declare where the line should be drawn. He knew of no disease that required more patience, more knowledge, more perseverance, more anxious watching day by day before the end was accomplished, than joint disease. He had before him the vision of his own master and friend Abernethy, who narrowly watched cases of that kind week after week, and month after month, and rarely failed in restoring them without having recourse to the operation of resection, which he regarded as a substitute for amputation, and which ought only to be regarded as a *pis aller* when all the other methods of treatment had failed.

Mr. Curling said he thought Mr. Holmes Coote had been a little too credulous in believing the statements made by the patients coming to the Orthopædic Hospital, to the effect that their limbs had been condemned elsewhere. He believed there was scarcely a case of diseased joint in children requiring amputation, and he did not believe that the statements made to Mr. Coote were true.

Mr. Humphry said his statement was, that excision of the joint should be performed in cases where the joint was not likely to be restored to usefulness. He had remarked that such diseases rarely terminated fatally; and he did not propose excision as a means of saving life, but as a means of restoring a useful limb. It might be true that amputation was not required to save the patient; but the question was, what kind of joint had been left in the cases treated in the ordinary way. Frequently the disease passed off after a time; but when it reached the point to which he had referred in his paper, it was not often that a useful limb was left; but by the operation of excision in such cases the use of the limb was in a great measure recovered, without danger to the patient's life.

Mr. Tamplin could not conceive that any surgeon was justified in putting the life of a patient in danger for the chance of restoring a limb, in the way proposed. According to statistics recently published, the operation was fatal in one case out of six; and even from the author's statement it appeared that the operation was not free from risk. As to the result of the more favourable cases, he was not aware that bony union was established except in a few instances; if that did not take place, the operation was a great failure, and there being no ligaments to hold the bones together the limb was like a flail. The first case mentioned was that of simple contraction of the knee-joint, displacement upwards and backwards; and cases of that kind had been from the first successfully treated at the Orthopædic Hospital by extension, and by subcutaneous division of the tendons. Not one fatal case had occurred at the hospital, and out of the large number of cases of diseased joint in children, he had not seen one that failed to be cured by the most ordinary care and attention. Some time ago, a boy came to the hospital with thirty openings extending from above the condyles of the femur to the ankle-joint. Amputation had been recommended by more than one surgeon. The boy, on applying, was about 10 or 11 years old; he was now about 17 or 18, and every wound was healed, the joint being no larger than the other, and he had no doubt that the leg would be entirely restored. He had asked the patient whether he would have preferred to have his leg off six years ago, or be in his present condition, with the prospect before him of having a straight leg; and he had expressed but one opinion upon the subject, which was in favour of the course of treatment that had been adopted. Dr. Sigmund, of Vienna, had told him that he never amputated, nor did he think a surgeon was justified in amputating, in young subjects, unless there was a prospect of hemorrhage.—*Med. Times and Gaz.*, March 20, 1858.

38. *Treatment of Enlarged Bursæ.*—Mr. Wm. Coulson, in an interesting clinical lecture on this subject, which has given rise to much difference of opinion and practice, makes the following practical remarks:—

"Reasoning from analogy, we might conclude that inflamed bursæ should be treated as inflamed synovial membranes, and indolent bursæ as encysted tumours. To a certain extent this may be true; but a great deal depends on the circumstances of each case. It is evident that active inflammation must be subdued by active means; but when this has been done, or when the tumour is naturally indolent, what treatment should we pursue? The principal methods recommended are—1. Rest and pressure. 2. Counter-irritation, mercurial or iodine frictions, &c. Abundant evidence exists to show that these and other similar means generally fail to effect a permanent cure. 3. Excision of the sac. In cases of small consolidated tumours this practice may sometimes be adopted; but extirpation of the bursæ is a severe operation: it has been followed by considerable inflammation, great disturbance of the health, and in some cases by death. 4. The bursal tumour, again, may be treated as a chronic abscess. It may be laid freely open by incision, or the contents may be evacuated, and iodine injections thrown in to modify the action of the lining membrane. 5. The practice, however, which I adopt myself, and which I would recommend to you, is more simple than any of the preceding; yet I have found it effective. The enlarged bursa is punctured with a grooved needle, such as is used for exploring tumours and swellings of a doubtful character. After evacuation of the contents, pressure is applied by means of soap-plaster and bandage; this is renewed from time to time, and puncture of the sac also repeated if necessary. The result is generally a permanent and safe cure. Even in cases where the bursæ are inflamed, and the skin over them red, I should prefer the puncture now noticed to making any incision into the tumours or supposed abscesses. You will have observed that incisions were made by the house-surgeons in both the cases related to you, and that a considerable quantity of purulent matter was discharged through the wounds. This is not conformable to my practice. In one case it appeared to have answered well; but in that of Susan S——, the patient's life was very seriously endangered by extension of the inflammation to the joint and the neighbouring parts."—*Lancet*, May 8, 1858.

39. *Use of the Tincture of Aconite as a Preventive of Rigor after the Introduction of Instruments into the Urethra.*—Jas. Long, Esq., Surgeon to Liverpool Infirmary, states (*Liverpool Medico-Chirurgical Journal*, Jan. 1858) that he had recently under his care at the Infirmary, at the same time, three cases of irritable and almost impermeable stricture of the urethra; in all of which it was impossible to make any progress by dilatation, in consequence of the severe rigors which ensued after each attempt to pass the catheter. Finding that the ordinary appliances did not prevent the occurrence of the rigors, and that the introduction of the instrument could not be attempted oftener than three or four times in a fortnight, in consequence of the severe local and constitutional irritation which followed its use, he adopted the following plan: He gave two minims of Fleming's tincture of aconite, in an ounce of water,

immediately after the introduction of the instrument. The result was as follows: In one case the tincture was given without any omission, after every introduction of the instrument: no rigors occurred, and the treatment progressed without any interruption, to a successful termination. In the second, the same result occurred. On one occasion the tincture was omitted, as an experiment, and a rigor occurred, followed by its usual consequences. The tincture was resumed, and no rigor again occurred, though the instrument was allowed to remain in the stricture for half an hour or longer. This case also did well, but the man left the Infirmary before the dilatation was fully completed.

In the third case, which was the most severe, no rigor occurred whilst the tincture was given, and the case was progressing favourably. The aconite was, as in the second case, omitted for the sake of experiment, and two introductions of the instrument were effected without the recurrence of rigor. On the third occasion, however, so severe a rigor, and such untoward local and constitutional symptoms experienced, that up to the present moment no further use of the instrument could be attempted. Mr. L. concludes that in the above cases, the tincture of aconite, by its direct sedative power, exerted a powerful influence in preventing the occurrence of rigors, and that in similar cases it may become a valuable addition to the means usually employed.

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40. *Lithotritic Instruments in Cases of Enlarged Prostate.*—Mr. WILLIAM COULSON, in an interesting paper (*Lancet*, Jan. 30, 1858), explains the necessity which exists for employing a peculiar lithotrite in patients who have stone and enlargement of the prostate.

"The changes," he remarks, "in the genito-urinary organs produced by enlargement of the prostate, and requiring the use of peculiar lithotritic instruments, may be explained in a few words. Many men who have passed the middle period of life labour under some enlargement of the prostate; and such a condition of the gland seriously interferes with the functions of the bladder; but for my present purpose it will suffice to consider the effects produced on the urethra and floor of the bladder by any considerable swelling of the prostate. A consideration of these effects will at once show in what manner the modified instruments that I employ in such cases are, of necessity, required. A constant effect of prostatic enlargement is elongation of the urethra. This lengthening of the canal may be connected with several conditions of the enlarged gland; it is, however, mainly confined to the prostatic portion of the urethra, and occurs in one of two ways. As the enlargement pushes up the neck of the bladder under the arch of the pubes, it necessarily draws up and elongates the vesical end of the urethra; or, while the gland is slowly enlarging from before backwards, that portion of the urethra which traverses it must necessarily follow the abnormal development of the prostate, and become elongated. In his recent work on the Prostate,[1] Mr. Thompson observes 'that in some preparations which he examined, the urethra measured three inches from the orifice of the bladder to the membranous portion, instead of an inch and a half, which is the normal length.' In all cases of this kind, more especially when the middle lobe is chiefly affected, the orifice of the bladder is thrown backwards in proportion to the development of the enlarged lobe: and hence the point of any instrument used is apt to catch against the superior wall of the canal before it enters the bladder. This is an obstacle which the surgeon is very likely to meet with; and I may add, the shorter the instrument he employs the more likely is the obstacle to occur.

"The effects of the morbid growth on the cavity of the bladder also require some notice. These effects, so far as regards my present subject, will depend on the degree of prostatic enlargement, and on the lobe principally affected. When the enlargement is chiefly confined to the middle lobe of the prostate, which encroaches on the floor of the bladder, the capacity of that viscus at its lower part is proportionably diminished. I have seen a considerable part of the bladder occupied by the enlarged prostate; and, in extreme cases, preparations of which are preserved in our museums, the morbidly developed gland has occupied a great portion of the vesical cavity. In all the cases now alluded to, the effect of this extension of the middle lobe of the prostate backwards is to form a reservoir or sac behind the enlarged gland. The floor of the bladder is here greatly depressed; the urine remains as in a sac; and here a calculus may be lodged, the detection of which is often extremely difficult. I have, at the present time, under treatment, a patient who has a stone concealed behind an enlarged prostate, the existence of which had escaped the notice of those surgeons by whom he had been previously examined.

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[1] The Enlarged Prostate, p. 23. 1858.

"The necessity of employing special sounds and catheters in cases of enlarged prostate is well known to all practitioners. The increased length of the urethra, and the encroachment of the enlarged lobe on the floor of the bladder compel the surgeon to use a much longer catheter than usual. In prostatic enlargement the ordinary catheter will not penetrate into the bladder; and the experienced practitioner at once suspects the existence of the complaint from this circumstance. To enter the cavity of the bladder he takes a catheter from two to four inches longer than the one in ordinary use, and with an instrument of this kind he succeeds after having passed it about twelve inches beyond the orifice of the urethra. The same holds good with regard to the sound. Thus the stem of the ordinary sound measures seven inches and a half; the stem of a moderately-sized prostatic sound measures nine inches and a half. An ordinary catheter, now before me, measures nine inches and three-quarters to the point. A prostatic catheter measures thirteen inches and a half. From fourteen to sixteen inches is the length recommended in standard works.

"In cases of enlarged prostate, then, the surgeon requires a long catheter of peculiar shape to draw off the urine. For the same reason—viz., the increased length of the urethra, and the depression in the floor of the bladder—he will require a long lithotrite of peculiar shape, in order to catch and crush the stone with ease to himself and safety to his patient.

"If the long prostatic catheter be expedient, the long prostatic lithotrite is, *à fortiori*, indispensable. The necessity of employing a longer instrument than usual in such cases will, I imagine, be generally admitted; and if I insist on it here, it is because our standard works do not allude to the point—an omission of which I have been no less guilty than others, and which I would now repair. The ordinary lithotrite of Charrière measures ten inches from the root of the stem to the eye: the chord of the curve, from the eye to the point, is one inch and three-eighths. The long lithotrite, manufactured expressly for me by Charrière, measures twelve inches in the stem, and one inch and three-eighths in the curve. The stem of Weiss's ordinary lithotrite measures nine inches; the stem of the long instrument which he has made for me measures ten inches and a half; the beak is the same length in both, about an inch and a half.

"I need hardly occupy much space in dwelling on the necessity of the surgeon being provided with a long instrument of this kind, and of the many advantages which he will derive from its use. I can only say that I have had cases which, I feel convinced, I could never have conducted to a successful termination without it. It should be remembered, that with an elongated urethra, the distance between the external and internal orifices of the canal is increased by at least an inch. The enlarged prostate, again, occupies the front part of the floor of the bladder, on which it encroaches another inch or more. The calculus lies concealed in a sort of pouch behind the enlarged lobe, which rises like a barrier before it. Under these circumstances, it is evident that the surgeon will require an instrument longer than that in ordinary use by two or three inches; the common lithotrite will either not pass into the cavity of the bladder, or, if it does, after having been forced up to the handle, the motion of its curved part will still be greatly impeded by the prostate.

"In some of my cases the common instruments were not sufficiently long, and it became necessary to push them up to the shoulder before I could turn the point in the necessary direction. With the long lithotrite, on the other hand, the surgeon gets readily into the bladder; but to overcome the impediments likely to arise from an enlarged middle lobe, a peculiarly formed beak is necessary, and the pelvis must be raised.

"The beak or curved part of the lithotrite must be short, and the curve sharp. With an instrument of this kind the surgeon will often be able to 'fish up the stone from the depression behind the enlarged prostate,' in the manner described in the last edition of my work on the Bladder.[1] By turning the point down, and elevating the handle of the instrument, the stone will commonly be found in the position already mentioned. When the middle lobe of the prostate is much enlarged, and extends some way into the bladder, the point of the instrument cannot be turned downwards in such a way as to reach the stone. The plan from which I have derived most benefit in such cases is that of raising the pelvis of the patient in such a way, that the calculus shall be displaced towards the posterior wall of the bladder. Especial care must be taken that the pelvis itself is raised, and not merely the lower extremities. By adopting this plan, I have, on several occasions, immediately caught the calculi, which lay concealed behind the prostate as long as the patient retained the ordinary position. Every lithotrity couch should be provided with some mechanical contrivance for executing this proceeding quickly. The sufferings occasioned by the attempt to seize a stone behind an enlarged prostate, in the ordinary way, and after strong elevation of the handle, are often of the most distressing kind, and cannot certainly contribute to the well-doing of the patient. On the other hand, the ease with which the reversed beak falls on the stone is remarkable; but the manipulation requires a cautious and practised hand."

41. *Extraction of a Fragment of Gutta Percha Bougie from the Urinary Bladder by means of the Lithotrite.*—Mr. Holmes Coote relates the following interesting example of this:—

Mr. P., about thirty years of age, was passing for himself a full-sized gutta percha bougie, October 9, 1857, when the instrument broke between four and five inches from the distal extremity, and he found, upon withdrawal, that a fragment of that length was left in the urethra. He immediately called in a surgeon, who endeavoured, by cutting into the urethra from the perineum, to seize the bougie; but while operating, he perceived, and the patient himself felt, a sort of spasmodic action of the urethra, and the whole fragment was drawn into the bladder. The patient came to town a fortnight after the accident, and called on me in good health, but in considerable agitation and distress. He said that hitherto he had experienced but little inconvenience, although there was an uneasy and sometimes painful sensation after the evacuation of the bladder, and occasionally a painful feeling referred to the glans penis. The urine was clear, and he could retain it the usual time. I sounded this gentleman, and immediately felt the piece of bougie, which appeared to lie transversely across the neck of the bladder. A blow with the steel sound communicated a dull sensation to the hand, from which I inferred that there was no considerable calculous deposit. The patient's urethra was very capacious, and he had never suffered from stricture.

It was obvious that the fragment of bougie must be removed, as its presence in the bladder would inevitably lead to results so well known that it is unnecessary for me to enter upon them here. The question in my mind was, what kind of operation was most likely to afford relief without endangering life. He himself, having read some medical works since his accident, suggested an opening by an incision along the median line of the perineum into the prostate gland and neck of the bladder, commencing behind the scrotum (a proceeding sometimes called Allerton's operation). Some of my colleagues thought that the lateral operation would be the readiest and the surest method. But, bearing in mind the numerous accidents and the high rate of mortality attendant upon the usual operation for extraction of the stone (lithotomy), I determined to act upon the piece of bougie with the lithotrite. The plan which I proposed and followed out was as follows:—

1. To introduce the lithotrite and seize the fragment very gently.

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[1] The Diseases of the Bladder and Prostate Gland, p. 463. Fifth edition. London, 1857.

2. By a sliding movement to try to reach one of the ends, and by a turn of the screw to grasp it firmly, and pull the piece lengthwise through the urethra.

3. Failing in this attempt, to cut the bougie into fragments, and to trust to the efforts of the bladder for their expulsion.

My only fear (and that an unnecessary one) was that the blades of the lithotrite might become clogged with the gummy substance, and cease to move freely. But I was prepared, in the event of any accident which might prevent my withdrawing the lithotrite, to cut immediately into the bladder in the usual way.

October 26. The bladder having been injected with about a pint and a half of warm water, I introduced the lithotrite and seized the bougie. The instrument was made to slide along towards one extremity, when the blades were fixed, and the first attempt to withdraw the bougie lengthwise was commenced. Twice the bougie slipped from the blades of the lithotrite, and upon the third occasion blood began to flow in small quantity from the urethra. I felt that much damage might be done to the mucous membrane of the urethra by the forcible withdrawal of the bougie, bent and ragged, even were such an event feasible; and, inasmuch as I failed, I resolved upon crushing the bougie at once into smaller pieces. Accordingly, the lithotrite divided it twice, and brought away some small bits of gutta percha impacted in the blades.

No unpleasant symptoms having ensued, I repeated the operation on the Thursday following, four days afterwards. The bougie was not so easily felt, but it was again seized, and divided twice; larger fragments were withdrawn between the blades of the instrument, which were not tightly closed; but the bulk of the foreign body remained in the bladder.

About five hours afterwards, I was sent for, the patient having experienced great irritation about the neck of the bladder. It was clear that a bit of bougie had entered the vesical orifice of the urethra. There was spasm, desire to make water, and to empty the rectum. An enema, containing 40 minims of laudanum, was immediately given, with orders to have it repeated, if necessary. During the course of the night, severer symptoms came on; the patient walked restlessly about the room, and about three in the morning expelled, with a violent rush of urine in two acts, rapidly succeeding one another, the whole piece of bougie, about half with each of the expulsive efforts.

No symptom has since occurred, and the patient has returned to the country in good health.

I doubt not there are many surgeons who have met with somewhat similar cases; but I have been induced to record the particulars of the present one in consequence of the great diversity of opinion expressed by those among my friends with whom I spoke or sought advice. A very general feeling prevailed that lithotomy was the proper measure; and even up to the last, the issue of the case, as treated by the lithotrite, was considered doubtful. I have not met with any instance in which a similar account of so large an instrument has been removed in the way here mentioned; although there are cases scattered through the public journals in which pieces of smaller bougies have been successfully extracted. In the *Medical Times and Gazette*, Sept. 13, 1856, we see related the particulars of a case from St. Mary's Hospital, under the care of Mr. Lane, wherein a piece of gutta percha bougie of small size broke off in the urethra of a patient suffering from stricture, and passed into the bladder. The ordinary assistance to be obtained from instruments such as a grooved sound was not possible; consequently, Mr. Lane proceeded to cut into the neck of the bladder in the mesial line, and extracted the fragment by a small pair of lithotomy forceps. The whole length amounted to about five inches.

Mr. Cock performed the lateral operation of lithotomy with success on a patient in whose bladder a piece of gutta percha bougie, of the diameter of No. 4, and about five inches in length, had passed, in consequence of its breaking in the urethra. Here, too, there was a stricture, rendering highly improbable any expulsion of the fragments by the natural passage.

A case, in some respects resembling that now before the Society, is related in the same journal by Mr. Hutchinson, of the Metropolitan Free Hospital. A piece of gutta percha bougie, of the diameter No. 7, and about three inches in length, broke off in the urethra of a patient in whom no disease of the urinary organs existed, and passed into the bladder, as in the preceding cases.

No. 8 catheter was introduced without trouble, showing that the patient had a capacious urethra, and acting upon this fact, Mr. Hutchinson made several, though ineffectual, attempts at extraction through this passage by forceps. He then distended the bladder with warm water, of which some was shortly afterwards voided. Six hours afterwards, a strong desire to micturate came on, when the broken bougie was driven with force into the urethra, and was expelled without further difficulty.

I will not advert to the reprehensible practice of patients passing bougies for themselves on account of some real or supposed disease of the urethra or bladder, further than by remarking that, in many of these cases, the mind of the patient is in a morbid condition of anxiety or excitement. The first point to which I would draw attention is, that when the point of the instrument is fairly in the bladder, there being no stricture to interrupt its progress, its usual seat of fracture is about five inches from the extremity or tip, and that it corresponds to the part of the urethra anterior to the bulb, where the suspensory ligament binds the organ to the pubes; in short, at the junction of the movable with the fixed part of the urethra.

The muscular coat of the urethra draws the broken piece along the passage into the vesical cavity; when fairly lodged there, it lies somewhat transversely across the neck of the bladder, the two ends impacted in the folds of mucous membrane; and there it remains, daily receiving its coating of phosphates.

The extraction of the foreign body is a measure which must not be delayed; and I think that this case is interesting as showing how long a piece of a full-sized bougie may be expelled, when properly divided, through the natural passages, without the performance of any operation involving the prostate or neck of the bladder, a measure never unattended by danger. The fact, too, is of value in deterring surgeons from forcibly drawing a large piece of bougie through the urethra, even should they be so fortunate as to seize it by one end, and so command its long axis; for the male urethra bears lesion of the mucous membrane very badly, and it is hardly possible to estimate the amount of injury which would be inflicted on the various ducts, both of primary and secondary importance, engaged in the formation of the spermatic secretion, or upon the walls of the canal itself, which might be subject to the formation of a stricture.—*Med. Times and Gaz.*, Feb. 20, 1858.

42. *Statistics of Tracheotomy in Croup; Indications and Contra-indications of the Operation.* By H. Chaillou. *The Journal of Practical Medicine and Surgery* records each year the statistics of the operations of tracheotomy performed at the Hospital for Infancy, in cases of confirmed croup. In a disease so common in its appearance, and generally so fatal in its issue, it is all-important to establish with precision the value of a method of treatment, the advantages of which still remain a matter of doubt. We take this opportunity of reverting to the operation itself, and of pointing out the most favourable period for its performance, and also the circumstances which ought to preclude it; we shall describe the modifications which experience has introduced as indispensable or advantageous in the *modus operandi,* and what details of the after-treatment require peculiar attention. The following is the table of the operations performed in the course of the last eight years, with the corresponding number of cures obtained up to December 31st, 1857:—

1850 . . .	20 operations,	6 cures.
1851 . . .	31 "	12 "
1852 . . .	59 "	11 "
1853 . . .	61 "	7 "
1854 . . .	45 "	11 "
1855 . . .	48 "	10 "
1856 . . .	55 "	14 "
1857 . . .	71 "	15 "

Altogether 390 operations, 86 cures.

The above table shows that the proportions of cures remains pretty nearly the same, viz: about one in four or five, doubtless an encouraging result, when it is recollected that by far the greater number of children who have undergone tracheotomy were in the last stage of croup, and on the brink of unavoidable dissolution.

On the other hand, on January 7, we were present when a little girl aged two years and a half, expired during the operation, notwithstanding the well-known skill of the surgeon. If such disasters occur under the able hands of such men as Messrs. Guersant and Trousseau, less experienced surgeons should nevertheless not be deterred from seeking in tracheotomy the positive advantages which it confers in many instances. The precept to be extracted from these reverses is derived from the occasionally great difficulty which surrounds the operation ; hence the necessity of warning families of the immediate peril to which the child may be exposed, and of a careful inquiry into the circumstances which may be productive of danger, in order, if possible, to remove them or attenuate their sinister consequences. With regard to the indications and counter-indications of tracheotomy, the age of the patient is not an unimportant consideration. A child aged eighteen months died in convulsions during the operation, which was performed by Dr. Guersant. The little girl whom we previously adverted to, was two years and a half old. In another similarly fatal case, which we witnessed at Montmartre, the child, a little girl, was also under three years of age.

At an early period of life, tracheotomy is frequently surrounded with very considerable difficulties. In most operations performed upon infants, dissection requires more care, and presents greater danger, than in the adult, on account of the closer connection of organs with each other. It is, in particular, easy to wound veins, the hemorrhage from which conceals the textures to be divided. The trachea is deeply imbedded in cellular tissue and fat; it is small, movable, and even when it has been incised according to all the rules of art, the introduction of the metallic tube, with its caoutchouc conductor, may be next to impossible. This unfavourable circumstance has, however, only been met with twice by Dr. Guersant, whose personal experience reposes upon upwards of 200 operations. Acknowledging, therefore, that when tracheotomy is performed upon children under two years of age, it has many chances of proving of no avail, still that surgeon does not consider extreme childhood an insuperable objection to the operation in question.

Pneumonia coexisting as a complication of pseudo-membranous croup, has hitherto been generally deemed to preclude surgeons from entertaining any idea of tracheotomy. Dr. Guersant is at present of a contrary opinion, and he has ascertained that the resolution of the pneumonia is facilitated by the greater freedom with which the respiratory functions are accomplished after the operation. In his opinion, only one express counter-indication exists to the incision of the trachea during croup, namely, diphtheritic infection or general diphtheritis. When in a child, not only the laryngeal ligaments, but also the nose, ears, or some part of the skin are the seat of pseudo-membranous secretions, or if epistaxis be present, together with the signs of extreme debility, it is in vain to perform tracheotomy ; death must be fatally expected, as in the lamentable cases of Drs. Valleix and Blache, Jun.

An excesssive degree of asphyxia does not, in Dr. Guersant's opinion, constitute an insuperable obstacle to the success of the operation, if the difficulty of breathing is of a permanent character, and has lasted, in a continuous manner, one hour at least.

It is even in the slow and continuous form of asphyxia that the chief indication for tracheotomy resides. In this case, the only useful interference must have for its object, to produce respiration, and to restore life by again filling the lungs with air. Further, if the diagnosis has been inaccurate, and that, instead of laryngeal diphtheritis, merely a swelling or œdema of the glottis be present, the operation causes the surgeon to gain time, during which the serous infiltration may decrease, and the patient be saved.

Intermitting asphyxia, however. does not so imperatively claim surgical interference. Dr. Guersant has met with children breathing only with violent efforts, and who appeared exposed to impending death. False membranes had been rejected, and no doubt of the nature of the complaint could exist. The necessity of opening the trachea was pointed out to the parents, who objected to the operation. In such cases, emetics, calomel, alum, chlorate of potass were resorted to, and two of those children recovered. This intermitting sort of asphyxia must, therefore, be discriminated from the continuous form; but with the exception of these cases of uncommon occurrence, and general diphtheritis, which is much more frequently observed, the performance of tracheotomy is absolutely indicated whenever, in a patient whose voice is extinct, continuous and increasing difficulty of respiration exists, and has lasted two, three, or four hours.

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43. *Severe Abdominal Wound; Recovery.*—The following extraordinary case was communicated to the Cork Med. and Surgical Soc., Oct. 28th, 1857, by the President of the Society, Dr. Corbett: "Thomas Walsh, aged 70, residing in a wretched hovel, while in the act of removing the old thatch off its roof with a view to its being repaired, fell between the rafters, and in his descent was caught by a hook in one of the latter, close to the crista ilii of the left side, and the whole of the abdominal integuments were obliquely torn up to the right hypochondrium. He was, after the lapse of more than an hour, accidentally discovered by one of his neighbours, lying on his face and hands in the midst of the sooty straw which he had thrown down into the interior of the cabin. He was sensible, but unable to move from the position. When turned on his back, the fearful extent of the injury which he had sustained presented itself; a large ragged wound, through which protruded almost the whole of the intestines, which hung down to his knees, and were covered with adherent soot and straw. I was sent for, but not told the extent of mischief; and, on my arrival, I found the clergyman with the patient, who, on retiring from the poor man, said it was impossible that he could live many minutes. I was unprepared, and on finding the wretched plight of the sufferer, I proposed to ride home again, a distance of two miles, and bring everything necessary to set matters to rights, if possible. I stipulated that, if fatality occurred during my absence, a messenger should be sent to inform me. I was just about to start from my house when a friend of the patient told me he was dead, which did not at all surprise me. However, on the following morning, when visiting a short distance from his residence, I met a man whom I knew, and I said, 'Well, poor Tom Walsh met with a sad end.' 'Wisha no, sir, he's not dead at all; and Jack Culnan, the sow-gelder, came after your honour left, and stitched him up,' was the reply. Immediately on hearing this, I trotted at once to where Walsh was lying, and, true enough, he was alive, and livelike. He at once greeted me with a cheerful countenance; pulse steady, at 100; complained only of soreness; had neither nausea nor vomiting; temperature all over the body natural. I proceeded at once to examine the state of the wound, when you may judge my astonishment at seeing this extensive laceration rudely stitched throughout by uninterrupted suture, through means of a good-sized packing needle and twine. I made inquiry as to the operator's mode of proceeding in the case, as it struck me that there must have been considerable difficulty in removing the straw and soot which I saw adhering to, and covering the whole of, the protruded intestines, when I was informed that Culnan called for a large milk-pan, which he had filled with warm water, and into which he immersed the whole of the intestines, and, with a piece of soap, carefully washed off all extraneous matter. When he considered the whole sufficiently cleansed, he commenced by squeezing the bowels from above downwards, and inserting his packing needle through the integuments wherever he could approximate the edges. Between the portions where he introduced the suture, as he took tolerably wide stitches, the wound was gaping and the intestines appearing, but healthy-coloured. He had not even applied a bandage. Having some adhesive plaster with me, I tried to aid this piece of rude surgery, and got on a roller bandage. As you may suppose, I felt a deep interest in the result, and I regularly visited Walsh twice a day. No bad symptoms whatever accrued. There was slight suppuration at two or three points, but the wound healed kindly. On the third

day after the accident, the patient having been well supported on arrowroot, sago, bread and milk, &c., a dose of castor oil was administered, and acted copiously on the canal. The patient made a good recovery, but with an inconveniently large hernial tumour, which, for the remainder of his life, required his constantly wearing a pad and flannel roller to support it. He lived for three years after the accident, and was carried off by bronchitis."—*Dublin Quart. Journ. Med. Sci.*, Feb. 1858.

44. *Ovariotomy.*—Two cases of ovarian tumour successfully treated by ovariotomy, by Dr. J. M. Joseph, Surgeon of the Civil Hospital, Combaconum, are reported in the *Indian Annals of Med. Sci.*, for Jan. 1858.

OPHTHALMOLOGY.

45. *Surgical Treatment of Glaucoma.*—[In our previous No., p. 539, will be found some remarks by Mr. J. W. Hulke, on the pathology and morbid anatomy of Glaucoma. In a more recent paper (*Med. Times and Gaz.*, March 27), this surgeon has given some account of Dr. Graefe's surgical treatment of this affection.]

The whole class of evacuants, antiphlogistics, diaphoretics, diuretics, laxatives, and a mercurial course pushed even to salivation, Mr. Hulke states, had failed in Dr. Graefe's hands, and hence his attention became directed to local measures. "He (Dr. Graefe) first tried mydriatics, which he had found useful in the ciliary neurosis which attends corneitis and iritis; but here they failed him, probably, as he says, because little or none of the atropine he dropped in was absorbed, in consequence of the internal distension. Then he tried the well-known operation of paracentesis of the anterior chamber, and with some abatement of the symptoms, but the melioration was only temporary; and even in cases where he had at intervals repeated the operation, the results obtained were not permanent. His own observations had already made him acquainted with the influence of the formation of an artificial pupil in certain cases of partial sclerotic and corneal staphyloma. The practice has been to remove the staphyloma, and then, if possible, to make an artificial pupil if the natural one was obstructed, but Dr. A. von Graefe has reversed this order: he had first made the artificial pupil, and then had found that the staphylomata sank to the common level. (A. F. O. Bd. iii. Abth. ii. 491.) Bearing this in mind, he experimented on animals, excising portions of the iris, and found the operation was followed by a softer state of the eyeball. Supported by these facts and conjectures, he thought himself justified in performing iridectomy in glaucoma. He performed his first operation in June, 1856. The operation he recommends consists in the excision of a large portion (even a fifth or fourth) of the iris in its entire breadth from the edge of the pupil to the ciliary margin. Mr. Bowman does not (at least in chronic cases) excise more than an eighth of an inch, but, whatever the extent, he makes an excision of corresponding length at the edge of the sclerotic into the extreme rim of the anterior chamber, with a common extraction knife, great care being taken not to wound the iris or lens. So far the operation resembles that for extraction, only a very small flap is raised at the junction of the sclerotic and cornea, but rather in the sclerotica.

"Dr. A. von Graefe recommends that the portion of iris to be excised should be larger in proportion to the intensity of the symptoms and distension of the globe. Mr. Bowman has observed that much care is necessary in making the incisions; the small size of the anterior chamber consequent on the advance of the lens demands great caution in directing the point of the knife; and if the chamber is opened by a simple puncture, which is subsequently enlarged by a sawing movement, the difficulties may be increased by the immediate escape of the aqueous humour, and the knife becoming entangled in the iris, or wounding the lens before the incision has been enlarged to the desired extent. The knife, therefore, once entered, should be pushed steadily but slowly onwards, so as to cut its way out ere the escape of the aqueous humour allows the iris to fall before its point or edge. When the incision is complete, the iris bulges a little through the margins of the wound; it should now be gently drawn out with forceps, and be cut off with scissors at each angle of the wound. The result is that the pupil is at once enlarged up to the incision, which forms, as it were, the base of a *coloboma iridis*, and the edge of the lens with its suspensory ligament passing in front of the vitreous humour to the ciliary processes is exposed to view; a little blood often trickles into the chamber, and may be either removed through the incision, or allowed to remain and be absorbed.

"Dr. A. von Graefe usually makes the incision at the inner side of the cornea; he thinks the situation of little importance, but says it may, if desirable for appearance sake, be made above. This last situation was chosen, and is preferred by Mr. Bowman, because, while he considers it a matter of indifference as far as regards the relief of tensions, which part is excised, he believes that the cover thus given by the upper lid to the margin of the lens, which has been exposed by the removal of the iris, contributes to the perfection of vision, the central part only of the lens being usually uncovered.

"The operation was introduced into England by Mr. Bowman, and first performed by him in the Moorfields Ophthalmic Hospital, May 1, 1857.

"Subsequently it was taken up by Mr. Critchett, and by other members of the Hospital staff. During the last six months it has been subjected to extensive trial, and, I may safely affirm, has succeeded beyond expectation. Mr. Critchett believing that a less extensive excision of the iris is sufficient, has modified the operation; he makes a small incision within the margin of the cornea with a broad cutting needle, draws out a portion of the iris with a blunt hook, and leaves it in the wound; or if it protrude much, he removes a portion, and leaves the remainder in the wound. Entangled in the wound, it soon becomes adherent, and, after a few days have passed by, the little bead of iris shrinks away, or remains for awhile as a small hernia.

"The operation proposed by Dr. A. von Graefe is not very difficult to perform, and is not attended with subsequent inflammation; indeed, it may be undertaken, and often succeeds best during the active congestion of the acute form of glaucoma. The simplest treatment afterwards suffices; the lids should be closed for a few days with a small strip of plaster, and a piece of wet rag may be laid upon the eye if agreeable to the patient's sensations.

"For a day or two after the operation the aqueous humour drains away, but soon the incision unites, and the anterior chamber again fills. The hardness of the globe is at once lessened, and gradually diminishes till a natural tension is attained. The pain generally at once abates, and soon altogether ceases; usually there is at once a slight improvement of vision, and this goes on steadily increasing for some time. The dulness of the cornea and the diffused haziness of the humour disappear, and, in many instances, at least, the iris regains its natural brightness and its functions. I mention this latter fact particularly, because statements have appeared in print, that the iris becomes atrophied after the operation. The enlarged ciliary veins decrease, and soon the eyeball resumes a more natural appearance; indeed, the artificial coloboma is the only striking tell-tale which is left, and if the excision has been made under cover of the upper lid, even this is concealed from view. Coincident with these changes a similar improvement is going on in the deeper parts of the eyeball. The vitreous humour regains its clearness, and the ophthalmoscope shows us that the pulsation of the central artery of the retina ceases; the retinal ecchymoses, which Dr. A. von Graefe says often increase immediately after the operation, undergo absorption in the course of a few weeks; and the turgid, dilated veins regain a natural size.

"The improvement is most strongly marked in the acute cases, and the more early the operation, the more successful is the result obtained. I have seen patients who previously had only a faint perception of large objects, afterwards able to read; and others who had merely a perception of lights and shadows have regained a most useful amount of vision. One very remarkable circumstance is the gradual increase of the visual field to its natural limits: patients have more than once remarked, 'My sight is no longer so contracted.'

"In chronic glaucoma, the results are not so striking as in the acute form; nor need this surprise us, for the rapid blindness which occurs in the early stage of acute glaucoma is the direct effect of pressure upon the retina, rather than the consequence of structural changes; while in chronic glaucoma, structural changes in the retina proceed, *pari passu*, with gradual increase of pressure and the diminution of sight; yet, even in those cases of chronic glaucoma in which no obvious improvement has followed the operation, it appears to arrest the progress of the disease, and to preserve to the sufferer what little sight he has left. future experience can alone determine whether the relief is permanent. A very important question is the expediency of performing the operation in the premonitory period, which, in about three-fourths of all the cases, precedes the most urgent symptoms. The difficulty of coming to a correct solution of this question will be increased in proportion as the early symptoms are vague; but when they are strongly marked, the known undeviating course of the disease will justify us in recommending the operation even at this early period.

"I have hitherto abstained from entering into any speculations as to how excision of a portion of iris can reduce the over-tension of the eyeball; that it does so is an established fact, but the theory of the procedure is very far from clear. Dr. A. von Graefe, himself, conjectures that the reduction of the tension may be effected by a combination of circumstances, which comprehend the diminution of the secretory surface (of the iris), the relaxation of the tensor muscle of the choroid (ciliary muscle), and the influence which iridectomy exerts upon the circulation of the choroid.

"The following we believe to be Mr. Bowman's views: He supposes that the primary relief of the internal tension is due to the aqueous humour escaping at the time of the operation, and continuing to trickle through the puncture in diminishing quantity during the few days occupied by the healing process. During this first period the eyeball, he says, becomes more soft than natural, and the lens remains in contact, or nearly so, with the cornea. As the wound becomes firmly united, the gap formed by the removal of the iris allows the aqueous and vitreous humour to come together (of course with the intervention of the delicate hyaloid and suspensory ligament), whereas the iris was before an effectual barrier between them, it being now clearly ascertained by the researches of Crämer, Donders and others, that the iris is naturally applied closely to the surface of the lens, and admits no aqueous humour through the pupil—in fact, that no posterior chamber of the aqueous humour in reality exists. In glaucoma, the lens is usually forced forward, and the iris projected in front of it so as to be even more closely and firmly in contact with it than natural. Mr. Bowman conceives the result of excision of the iris probably to be, that the redundant fluid effused behind, and mingled with the vitreous humour, causing it to compress the retina, is permitted to transude into the aqueous humour, and then to escape from the eye either by exosmose through the cornea (a road not previously open to it), or by being absorbed by the vessels distributed on the anterior surface of the iris. As this removal of the effused fluid gradually takes place, opportunity is given for progressive restoration of the aqueous humour in its natural quantity, and for the return of the lens and iris to their proper positions, while the globe acquires more firmness, without again becoming tense. As observed by Mr. Bowman, however, an eye thus treated is very apt to lose the power of adaptation to near vision, which it may have in some degree retained in chronic glaucoma up to the time of the operation: the exercise of this power depending on an increase of the curvature of the lens in the pupillary area under the pressure of the iris on its marginal region, an action which becomes almost, if not quite impossible, when part of the iris is excised. It thus, he says, may sometimes happen that an eye which is gradually and certainly losing all sight under the advancing disease, but which under favourable conditions, and with the aid of a convex glass, retains the faculty of reading even small print within a few degrees of the axis of vision, may lose some of this power by the operation, and nevertheless obtain a much wider range of sight, and secure that range permanently, by the subsidence of the morbid process consequent on the relief given to internal pressure. It is of course desirable in all cases, as pointed out by Dr. A. von Graefe, to excise as small a portion of the iris as shall suffice to secure the cessation of the disease. Future experience will probably serve to determine how much may be necessary for this, under the varying intensity of symptoms, and at different stages of its progress.

"Another explanation has been offered by Mr. Critchett, who makes a smaller incision in the cornea, a little within its margin, and leaves the iris entangled in it, by which, he says, time is allowed for the adjustment of the normal tensions, and a sort of safety-valve is left for a time, to prevent such equilibrium from being again disturbed."[1]

46. *On the Operation of Iridectomy, or Excision of a piece of the Iris, as recommended by Dr. Graefe, of Berlin, as a means of cure in various diseases of the eyes, especially chronic iritis, irido-choroiditis, and glaucoma.* By T. Wharton Jones, F. R. S., Professor of Ophthalmic Medicine and Surgery in University of London, and William Mackenzie, M. D., Lecturer on the Eye in the University of Glasgow, &c.—Dr. Graefe maintains that repeated relapses of iritis are in most cases owing to *Synechia posterior*, or the adhesions formed between the iris and capsule of the lens by exuded lymph, and not to any constitutional or other general cause. Accordingly, the dangers of injury to the sight in acute iritis, he alleges, have been much diminished since his introduction of the free use of atropia (its application to the eye every five minutes) in the treatment of that disease. For, says he, neither the antiphlogistic and mercurial treatment, nor the other methods which have been recommended, were found sufficient to cure iritis completely. They are, he admits, important and indispensable adjuvants, but contends that mydriatics are the only certain remedy!

It seems to us that this is a very perverted view of the matter. We consider that the tendency of iritis to relapse when it does occur, is in a great measure owing to the inflammation having been wholly neglected or ill-treated at the first, the treatment interrupted before the cure was complete, or the patient exposing himself anew to the exciting causes. As a neglected conjunctivitis leaves the conjunctiva very susceptible of new attacks of inflammation, so an iritis, which has been allowed to run its course unchecked, or has been imperfectly cured, engenders a liability to relapse from the slightest cause, and that whether synechia posterior have become established or not. It is to be admitted, however, that the liability to relapse is, in general, greater when there is synechia posterior; but this is not in consequence of the synechia itself; the adhesions are merely an evidence of the attack of iritis, which led to the exudation of lymph in such a degree as to establish permanent synechia posterior, having been very severe and obstinate, either naturally or from neglect or bad treatment. Synechia posterior, therefore, instead of being a cause of relapse is an effect of the same causes as that on which the tendency to relapse depends, viz., the ill-cured inflammation.

When Dr. Graefe says that he has found neither the antiphlogistic and mercurial treatment, nor the other methods which have been recommended, along with, he ought to have added, the usual moderate employment of belladonna or atropia, sufficient to cure iritis completely, we attribute the failure, not to the inefficiency of the plan, but to Dr. Graefe's unskilful application of it. Dr. G. must know quite well that wide dilatation of the pupil is no preventive of the exudation of lymph, and consequently of the establishment of synechia posterior, and therefore that mydriatics alone cannot be, even if synechia was the essential cause of relapse, the certain remedy he pretends. Dr. Quadri,[2] of Naples, who lately visited Berlin, tells us that he watched some of Dr. Graefe's patients under treatment for iritis by means of the free excessive use of atropia for the purpose of preventing or destroying adhesions, and found that the patients, instead of getting better, became worse.

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[1] Treatment of Acute Glaucoma, by Mr. Critchett. Ophthalmic Hospital Reports, Jan. 1858, p. 59.

[2] Relation d'un Voyage Scientifique. Par le Dr. A. Quadri (de Naples). Annales d'Occulistic. Mai, 1857. Bruxelles, 1857.

Under the use of atropia the pain attending iritis often subsides; an effect Dr. Graefe attributes to the dilatation of the pupil, which may occur at the same time. This, however, is not, we think, the correct explanation of the matter. The proper way of expressing the fact rather appears to be as follows: The iritis subsiding, the pupil yields to the atropia; and on account of the subsidence of the inflammation the pain abates. It is, at the same time, to be remembered that belladonna has a specific action of relieving the pain. Taken internally in doses of ten or twelve minims of the tincture, it in many cases almost immediately affords relief to pain in or around the eye.

To return to synechia posterior, or the adhesions between the iris and the capsule of the lens: When there is total synechia posterior without actual closure or obstruction of the pupil with lymph, the communication between the circumferential part of the posterior chamber and the anterior chamber being merely cut off, Dr. Graefe calls the state *exclusion of the pupil.* When, in addition to total synechia posterior, the pupil is actually closed, he calls the state *occlusion of the pupil.* Occlusion thus includes exclusion of the pupil, while the latter may exist without the former.

Though both exclusion and occlusion of the pupil may exist without leading to relapse of the iritis which gave them origin, and although relapse with extension of the inflammation to the choroid, when it does occur, is principally owing to the tendency left by the imperfectly cured inflammation, we do not mean to say that the adhesions of synechia posterior contribute nothing to the relapse and extension of the inflammation to the choroid. On the contrary, we admit the propriety of the operation of iridectomy, or lateral excision of the iris, in cases of mere exclusion of the pupil, for the purpose of re-establishing the communication between the posterior and anterior chambers, and of relieving tension in cases in which the eye shows no disposition to recover itself completely, and especially in those cases in which there is a bulging of the iris towards the cornea. The success of the practice, however, does not appear to be very great. The first case Dr. Graefe gives is as follows:—

The patient, a man. *Left eye* quite blind, somewhat soft, iris bulging towards the cornea, but retracted at the pupil, which was closed by a white membrane. *Right eye* so dim-sighted that large objects only could be seen with it; total synechia posterior; iris greenish, and here and there bulging. This state of the eyes appears to have been the result of iritis with supervening choroiditis. Having tried mydriatics without effect, Dr. Graefe had recourse to the operation of lateral excision of the iris on the right eye. When the section of the cornea was made little aqueous humour escaped, but when the iris was seized and torn with the forceps a quantity of yellow fluid was evacuated. Next day the iris was found no longer bulging forward, and the anterior chamber was re-established. Eight days after the operation the patient could see to count the fingers at the distance of the whole length of the room, and to make out large letters. In the course of four years, the sight went on to improve so much that the man was able to undertake the duties of a situation requiring sure sight.

In similar cases Dr. Graefe states that he has always obtained the following results: Re-establishment of the anterior chamber; restoration of the natural texture of the iris; no further relapse of the inflammation; considerable improvement of sight. This improvement of sight Dr. Graefe satisfied himself was in most cases owing, not to absorption of the lymph in the pupil, but solely to diminution of the choroidal complication.

Dr. Graefe next performed iridectomy in cases of primary iritis, with exclusion of the pupil, followed by atrophy, in consequence of secondary choroiditis; the iris being at the same time pressed close to the cornea. In some of the first operations, the pupil contracted again to a slit, but there was always a certain improvement in the colour of the iris, and a restoration, though inconsiderable, of the anterior chamber. In some patients, after three or four repetitions of the excision of the iris, a result was obtained which Dr. Graefe says he could not have anticipated. Besides improvement in the condition of the tissue of the iris and restoration of the anterior chamber, the atrophy, if not too far advanced, disappeared. In one case of atrophy of both eyes, which Dr. Graefe had long before given up as incurable, he operated six times; after which, the sight improved from week to week, so that the patient came to be able to count the fingers at the distance of several feet, and to distinguish all large objects, and letters of the largest print, whereas before he had merely a slight perception of light. The iris became almost natural in appearance, the anterior chamber re-established, and the size and consistence of the eyeball more natural. At the same time, there was a somewhat advanced opacity of the lens, and the natural pupil was closed by a white membrane, so that, in short, the patient's degree of sight was in proportion nearly to the state of the refractive media.

Irido-choroiditis requires to be classed under two heads, viz., those cases in which choroiditis, with effusion between the choroid and retina, is the primary affection, and the iritis secondary; and those cases in which the iritis is primary, and the choroiditis secondary, and not much developed. In the first class of cases, restoration of sight cannot be expected. It is only in the second class, especially when the perception of light is still strong, and when atrophy of the eyeball is not far advanced, that benefit can be derived from the operation of iridectomy. But the best and surest results are obtained in the cases in which, with total posterior synechia, there is no bulging of the iris.

No doubt of it, we should remark, because these are cases in which the sight being still good, it would be better, perhaps, not to interfere at all. Dr. Graefe, however, is of a different opinion, saying: "It is, indeed, somewhat critical for the young practitioner to operate in such a case, because the patient still enjoys, for the most part, good sight—often being able to read small print—and because it is, moreover, not absolutely certain that secondary choroiditis must supervene. If the other eye is already amaurotic, in consequence of the disease, it is proper, notwithstanding this doubt, not to delay the operation, for the chances of success may be considerably diminished by the supervention of choroidal complication, as also the formation of cataract."[1] Dr. Graefe assures us that there is no fear of the sight suffering from the operation of iridectomy in such cases. We think, however, that the young practitioner, at least in this country, even if disposed to attempt the operation in such cases, is not likely to be afforded the opportunity of doing so on any patient who has not lost his wits.

In conclusion of this part of his subject, Dr. Graefe affirms that, in the large proportion of cases, the patients on whom the operation of iridectomy has been performed on account of total synechia posterior, have really remained free from relapse of the iritis.

The following are other states of the eye in which Dr. Graefe has performed iridectomy, or lateral excision of the iris, with the results of the operation.

1. Cases in which irido-choroiditis supervened on separation of the retina from the choroid. *Result.*—No improvement of sight, but an improvement in the organic condition of the eye, which was reflected on the sound eye, so that the use of it was not interfered with. In general, an already formed cataract was disclosed by the opening up of the new pupil.

2. The cases of irido-choroiditis, commonly known under the names of aquocapsulitis, iritis serosa, etc., in which there is little or no exudation into the pupil, but in which there supervene opacity and softening of the vitreous body, with tremulous iris, etc., and eventually separation of the retina from the choroid, cataract, etc. *Result.*—It was only in old and desperate cases of the kind that Dr. Graefe had recourse to the operation: and, as he performed it no more than six times, he cannot, he says, form any opinion of the probable success of the practice. He feels, however, encouraged to a further repetition of the operation, as in two of the cases he obtained results beyond his expectation.

3. Sclerotico-choroiditis. *Result.*—In cases of this affection, Dr. Graefe has not witnessed any bad effects from the operation of iridectomy, but he admits

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[1] Archiv fur Ophthalmologie, Band ii. Abtheilung ii. p. 228.

that he has obtained no good result, so that he does not feel encouraged to further attempts.

4. Corneitis, with or without iritis.—Dr. Graefe first performed the operation in those cases of this affection in which it appeared that the formation of an artificial pupil would come to be necessary, but in which, on account of extraneous circumstances, the termination of the corneal disease could not be waited for! *Result.*—The operation, Dr. Graefe says, did not aggravate the corneal disease, but, on the contrary, healing of corneal ulcers and clearing of opacities almost constantly ensued. Dr. Graefe thinks that the benefit derived from the operation was not owing to the mere evacuation of the aqueous humour, for this, he says, is useful only when the puncture of the cornea continues open, so that the aqueous humour may be permitted to drain away for some time. He, therefore, is of opinion that the excision of a piece of the iris is an essential element of the success by diminishing the secretion of the aqueous humour! We cannot help remarking that this assertion manifests great inaccuracy on the part of Dr. Graefe, for every one who has practised the operation of evacuating the aqueous humour in cases of acute internal inflammation of the eye, knows that a single evacuation is often sufficient to check the inflammation, and render it amenable to the remedies which it had before resisted.

5. In cases of swelling out of the lenticular substance after the operation for cataract by division, or after wounds, in order to prevent the bad effects of pressure on the iris. In some cases Dr. Graefe admits that it is best to remove the lens by linear extraction;[1] but he says that it is occasionally necessary to perform iridectomy instead, before extraction, or at the same time with it. This is especially necessary in cases in which the iris has been prolapsed into a wound of the cornea, and the pupil dragged and contracted. Existing inflammation is no contra-indication.

6. In cases of extraction of the cataract, when the lens does not readily pass the pupil, and when the iris is consequently injured by pressure. Dr. Graefe performs iridectomy after the completion of the operation.

7. When one eye is completely blind from chronic iritis, Dr. Graefe recommends the performance of iridectomy in order to relieve the opposite eye similarly affected.

In a case (the patient a girl twenty years old), of sympathetic amaurosis of the right eye supervening on irido-choroiditis, with separation of the retina in the left, Dr. Graefe excised the latter eye according to the method of Bonnet, in the hope of thereby arresting the failure of sight of the other, if not of improving it. The sight of the right eye did improve somewhat, but as no diminution of the morbid appearances observable in it by the ophthalmoscope (viz., excavation of the papilla optica and displacement of the trunks of the retinal vessels), had taken place in the course of three or four months, Dr. Graefe resolved to perform the operation of iridectomy. After this, the distension of the eyeball, he says, diminished; and, down to the time he last heard of the patient—a period of seven months—the sight had become no worse.

The excision of the left eye in this case, we think, might have satisfied Dr. Graefe.

We now come to iridectomy in glaucoma.

Considering intraocular pressure, in consequence of an increased accumulation of vitreous and aqueous fluids, indicated by abnormal hardness of the eyeball, the first stage in glaucoma, the question which Dr. Graefe proposed to himself in respect to treatment was—By what method is a diminution of the intraocular pressure likely to be effected?

Dr. Graefe first tried the local application of mydriatics, but without effect. On this proceeding we would remark, that it is not easy to perceive on what grounds any effect in diminishing intraocular pressure could have been expected from mydriatics. The contrary was to have been feared; for the fact is that mydriatics generally impair the sight still more in glaucoma, and this they appear to do by determining constriction of the arteries, and thereby increasing the venous congestion.

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[1] By this name, which has been unnecessarily introduced into our medical literature, Dr. Graefe designates the common operation of extraction by a small section of the cornea, as originally recommended by Gibson, of Manchester, and others.

Dr. Graefe next tried repeated evacuation of the aqueous humour. The improvement that resulted was in most cases merely temporary. Two patients only appeared to have been permanently benefited.

At last he had recourse to iridectomy, or excision of a piece of the iris, and in it discovered a true remedy for the glaucomatous process!

Summary of results of iridectomy in glaucoma.—In the premonitory stage. The occasional dimness of sight never returned; the ciliary pain and chroopsy ceased; the muddiness of the aqueous humour disappeared; the presbyopia slightly diminished perhaps; in short the result, Dr. Graefe says, proved most favourable. Admitting this, we nevertheless consider the operation unjustifiable, as we believe that an equally favourable result may as often be obtained from medical treatment, and attention to diet and regimen, with care of the eyes.

In the acute stage of inflammatory glaucoma, in other words, *acute arthritic posterior internal ophthalmia.*—Dr. Graefe's experience of iridectomy in this stage is greater than in the preceding. He has operated on twenty eyes shortly after the outbreak of the inflammation. The severest symptoms subsided after the operation, without the aid of any other means; and in the course of six or seven days the dioptric media had become so clear as to permit of ophthalmoscopical examination. The principal improvement of the sight was manifested in two or three weeks. In all the cases in which the patients were operated on, before the end of two weeks after the commencement of the inflammation complete restoration of sight took place. The second eye, notwithstanding the cure of the first, however, remained liable to be affected in the same manner, and required the same remedy. On this report of the success of iridectomy in the acute stage of arthritic ophthalmia, we would observe that the cases in which well-directed medical treatment, aided by paracentesis of the cornea, of the sclerotic, or of both, so as to evacuate the morbid accumulation within the eyeball, fails, are not likely to be much more benefited by iridectomy.

In the later period of acute glaucoma, or arthritic posterior internal ophthalmia.—Though the good effect of iridectomy is most marked in the early stage, it was found still useful in the later stages of acute glaucoma, or arthritic posterior internal ophthalmia.

In chronic glaucoma, or chronic arthritic posterior internal ophthalmia.—Although it was in chronic glaucoma that Dr. Graefe first employed iridectomy, he cannot as yet pronounce a definitive judgment as to the ultimate results of the operation, as the improvement at first obtained has been after two or three months lost.

In amaurosis, with excavation of the papilla optica.—In such cases, which, though they present the ophthalmoscopical appearances of excavation of the papilla optica, and pulsation of the central artery of the retina, are wanting in the intraocular pressure and external characters of glaucoma, no good effect, properly speaking, resulted from iridectomy.

The review which we have now taken of Dr. Graefe's singular application of iridectomy, or excision of a piece of the iris as a means of cure in various diseases of the eye, shows that there is little in it worthy of imitation.

From notices in the medical journals[1] we observe that iridectomy has been practised pretty frequently of late at the Moorfields Ophthalmic Hospital.

In chronic glaucoma, not much is said in its favour; but the cases described as inflammatory glaucoma, related by Mr. Critchett, in which he performed iridectomy, are sufficient to confirm Dr. Graefe's reports that good effects result from the operation in the latter disease. Notwithstanding this, the objection remains that the excision of a piece of the iris is a proceeding unnecessarily superadded to a means long known as calculated to give relief, and to which alone the benefit obtained is to be attributed, viz., the removal of the tension by evacuation of the superabundant fluid within the eye.

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[1] Medical Times and Gazette, May 9, 1857, p. 460.—Ibid., January 9, 1858, p 33.—Ophthalmic Hospital Reports. Nos. 1 and 2.

Dr. Graefe's practice of iridectomy appears to us so opposed to the plainest principles of surgery and common sense, and so little supported by its results, that we must confess our surprise at its having been so eagerly imported into this country. We have no doubt, however, that in a short time iridectomy as a means of treating glaucoma will be abandoned; while the attention of practitioners having been re-directed to the effect of taking off the intra-ocular pressure which plainly exists—not, however, as the primary, but as one of the secondary phenomena in glaucoma—the practice will be revived of more frequently puncturing the cornea and sclerotica in this disease.—*Medical Times and Gazette*, April 3d, 1858.

47. *Excision of Portion of the Iris for Glaucoma.*—Dr. BADER, in his report of operations performed at the London Ophthalmic Hospital during the month of February last, states that "excision of the upper fourth of the iris, for glaucoma, was performed in three cases. In two of them, both eyes were operated upon simultaneously. Hardly any inflammatory symptoms followed the operations, but vision was not improved. The ophthalmoscopic appearances in all were, cupping of the entrance of the optic nerve, partial loss of transparency of the retina, etc. The patients were of the ages of 70, 64, and 60; vision had been lost gradually, and without pain. The consistence of three of the globes was normal; three were harder. The pupils were inactive; their areæ were greenish; there were no enlarged ciliary veins."—*British Med. Journ.*, March 27, 1858.

48. *Evacuation of the Aqueous Humour in Eye Disease.*—Prof. Wm. MARTIN, Superintendent of the Calcutta Eye Infirmary, gives (*Indian Annals of Med. Sci.*, April, 1857) a brief abstract of a number of cases to show the utility in many instances of eye disease, of the practice of letting out some of the aqueous humour. It seems, he says, that this may be practised in a number of different affections of the eyes. The indications for its use, Prof. M. thinks, "are a sensation of fulness and tension about the globe, and particularly if it amount to severe pain of a tensive character. This may arise from inflammation of the globe, inflammation within the ocular capsule or cellular tissue of the orbit; more frequently from a subacute or chronic corneitis—if this is, at the same time, attended by deep ulcerations of the cornea, there is a still more pressing indication for giving relief by lessening the quantity of fluid which presses from behind upon the cornea; another pressing indication occurs in cases in which we have reason to anticipate that the sclerotic is becoming attenuated by pressure of fluid within it, whether the disease is situated principally in the sclerotic itself rendering it less capable of bearing the pressure from within which it is ordinarily subjected to, or in the choroid coat, or more internally in the parts connected with the vitreous humour. In exophthalmia, also, we have another decided indication, if circumstances permit, for the adoption of the practice.

"In all such cases as I have enumerated above, it will be found of advantage to diminish the quantity of aqueous humour pressing outwards. Whether this quantity is normal or increased in the great majority of cases attended with tensive pain, it is difficult to say—if an excessive quantity has been secreted, the good effect the practice has in removing or materially lessening the tension within a very few days, shows of what importance it is to find a plan by which the tension from behind upon the tunics being lessened, the secreting surface of the aqueous humour is prevented from throwing out a superabundance of fluid. If, however, the quantity of humour be normal, the practice must do good by lessening the tension upon parts which are in a morbid state of congestion or inflammation, or are distended by morbid effusions, and, therefore, not able to bear the ordinary pressure from behind of aqueous humour. The great relief that almost directly ensues in well chosen cases to the pain and tension, shows that this is one of the most effectual means of combating the state of congestion or inflammation of the tunics, particularly the sclerotica.

"It is a question whether this practice is advisable in the most acute forms of inflammation of the external or internal tunics, in which there may be sensations of great fulness about the globe. Many ophthalmic surgeons recommend it in acute cases, as a primary measure; also, in many cases of ulcers of the cornea, it seems to be adopted even where there may be no special signs of tension upon the cornea or the sclerotica. I have not been in the habit of employing it, as a primary measure, even in cases of inflammation of the globe. I think there can be no harm in waiting until we see the effect of the depletion, purgatives, mercurials, &c., we find necessary: if the pain of a tensive or throbbing character be relieved by these measures, I think there can be no necessity for evacuating the humour; and, in cases of acute inflammation in which the cornea and conjunctiva have been the parts chiefly affected, I have seen some additional irritation set up by the procedure. I would limit its use to those cases of acute disease in which pain of a tensive character is the most prominent symptom, and does not quickly yield to antiphlogistic treatment, or becomes aggravated while signs of conjunctivitis, &c., are less acute—and to cases of chronic disease in which there is, along with tension, evident fulness of the globe, or a tendency in the sclerotic to give way, or preternatural distension of the cornea. In acute cases I almost invariably evacuate the humour through a free incision of the cornea made with a cataract knife; but, in a few cases in which there seemed to be increasing accumulation of fluid, I have made an opening through the tunics posteriorly, with the view that, as its edges would heal more slowly, the humour might continue to drain away a longer time. The corneal section soon heals, and it may be necessary to repeat the operation in cases in which the fluid accumulates to an excessive degree.

"In chronic cases I frequently practise the posterior opening, and have never found the operation attended with bad consequences; in both acute and chronic cases, the relief given is decided and almost immediate. The patient is found to improve gradually, and, in the great majority of cases, the operation does not need to be repeated. The cavity of the globe having been reduced to its normal size, and the quantity of fluid at first lessened and then allowed to accumulate to the normal extent, the due balance between secretion and absorption is restored; at the same time the inflammation—if it was the cause of the disturbance of that balance—and its consequences have been removed, and all strain being taken from the sclerotica, &c., the tunics return to their normal condition. Thus, in appropriate cases, the practice of evacuation of the aqueous humour seems to be a most important adjunct to other means of treatment. I have not said anything about its use in cases of prominence of the globe from staphyloma, because it can only act as a palliative. This is, however, of importance in a great number of cases, particularly in those in which the whole of the cornea is not involved, and where the projecting iris joined to a closed pupil having lost the support of a cornea, has not yet been torn asunder. The removal of the aqueous humour, in these cases, sometimes allows of time for the collapsed iris to be covered with a pseudo cornea, sufficiently firm to prevent any further protrusion in consequence of pressure of the aqueous humour.

"As regards the operation itself, I find the common Beer's cataract knife answer well in paracentesis corneæ; and opening made with this, just within the margin of the cornea, allows much of the humour to pass out, and it cannot very readily collect again in quantity sufficient to exercise injurious pressure; in paracentesis scleroticæ I use an ordinary cornea knife."

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49. *Strumous Ophthalmia.*—Dr. Henley Thorp concludes an interesting paper on this subject (*Dublin Quarterly Journal of Medical Sciences*, August, 1857) with the following propositions:—

"That in all cases of phlyctenular or strumous ophthalmia there exists, of necessity, a special lesion of the nervous apparatus of vision.

"That this lesion is the cause of photophobia and the other pathognomonic symptoms of the disease.

"That it precedes, in most cases, the development of the inflammatory or objective phenomena; and that these phenomena are directly influenced by this condition, and but remotely by the constitutional disorder.

"That the lesion in question is a state of hyperæsthesia, or exalted sensibility of certain nerves, viz., the optic and retina, and the ciliary and conjunctival branches of the ophthalmic of the fifth pair.

"That the phenomena attendant upon photophobia—namely, contraction of the pupil, spasm of the orbicularis, sneezing, and lachrymation—are the results of reflex action, displayed in a morbid form under the influence of this lesion.

"That inasmuch as the impression of light upon the retina is competent to excite closure of the eyelids as well as contraction of the pupil, as proved by the experiment of Magendie, already quoted, optic hyperæsthesia may be admitted to exist as an isolated pathological condition, capable of producing photophobia independently of other nerves.

"That the symptoms of ophthalmic hyperæsthesia vary in intensity and character, according as the nerves referred to are separately or conjointly affected; and that physiological experiments, as well as pathological observations, sanction the division of the lesion into three forms.

"That the first form (optic hyperæsthesia) is characterized by the impression of light producing a luminous or chromatic glare, attended with a peculiar and distressing, but not painful sensation in the eyes; and that its symptoms, subject to occasional intermissions, commonly precede for several days the appearance of inflammatory phenomena.

"That the second or complicated variety of the lesion—that which engages all the nerves before mentioned—being quickly followed by the objective symptoms of strumous ophthalmia, can seldom be recognized for any length of time as a simple nervous affection, although invariably present in all unequivocal examples of the disease.

"That ciliary hyperæsthesia (third form) is best distinguished from the other varieties by the neuralgic character of the pain, and that it more frequently follows than precedes the ophthalmic disease.

"That a distinction should be made between the ordinary relapsing cases of strumous ophthalmia and those rarer examples of the disorder in which the symptoms pursue a course of greater certainty and steadiness, inasmuch as the therapeutical indications differ in the two varieties.

"That in cases of phlyctenular ophthalmia attended with inveterate photophobia, where a satisfactory inspection of the eyeball is desirable or necessary, the anæsthetic influence of chloroform is the most suitable expedient.

"That when scrofulous ophthalmia occurs in connection with chronic articular, or such like diseases, and protracted suppurative action is on the decline or has ceased, much benefit may be expected from setons and issues as prophylactic remedies.

"That arsenic is a most valuable agent in inveterate cases of this disease, more especially those complicated with chronic eruptions of the scalp or cutaneous surface generally."

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50. *Division Posteriorly of Cataract in Situ.*—Prof. Martin, Superintendent of the Calcutta Eye Infirmary, reports (*Indian Annals of Med. Sci.*, April, 1857) an outline of several cases, to demonstrate the utility of an operation which has been for some years more frequently resorted to for cataract than any other in his practice, "both as a preliminary proceeding and as the principal operation for individual cases. Its object is to divide a portion of a lens near the circumference, by making an opening in the capsule sufficiently large to admit the aqueous humour, in order that solution may be effected to a certain extent; the lens being left in its position, and the parts with which it is connected being undisturbed, or as little altered in their relative position as possible. A needle is entered through the tunics posteriorly and made to penetrate the lateral part of the capsule, and the substance of the lens at the circumference: it is then rotated a few times with a view of producing division of the lens, and, being then withdrawn, the operation is concluded.

"This operation has advantages over others employed for division, as follows, viz.: 1*st.* That it causes no alarm or irritation to the patient.

"2*d.* By its means often an almost immediate improvement of vision takes place.

"3*d.* Scarcely ever is there any inflammation succeeding it.

"4*th.* It assists us in our diagnosis (of so much importance with regard to future proceedings) as to whether the lens alone or the capsule with the lens is opaque, also as to whether the lens is soft or hard, whether it has a solid nucleus with a soft circumference or not, &c. &c.

"5*th.* The anterior hemisphere of the capsule is untouched, and, consequently, if transparent, does not become opaque as a result of the operation.

"6*th.* The aqueous humour is, by this operation, allowed access to the lens, without the lens being separated from its connections.

"This is the operation most generally performed in the infirmary for cataract, both as a preliminary and as a principal operation. In the greater number of cases of the disease, as it is seen among the natives of this country, the cataract is of a mixed consistence, and may be likened to jelly somewhat hardened, in a great portion, if not all, of the substance. This is often the only operation that is found necessary, but, in many cases, particularly if the nucleus is solid, it is found necessary to perform other operations for division, depression, &c., of what remains. As regards a subsequent operation for depression, it is believed that this preliminary operation does good by getting rid of the softer parts of the lens which, by their lightness, and by the bulk of the object to be depressed, cause it often to rise above the axis of vision after the depression. The softer circumferential parts having been removed by absorption, the subsequent operation enables the less buoyant mass now left, to remain in the position into which it has been depressed. There is also diminished risk of a smaller mass pressing upon and doing injury to the internal tunics.

"There are many cases in which it will be found by no means sufficient to have made a smaller aperture in the capsule, and to have admitted the aqueous humour within it, and incised the lens: it will be necessary to divide the lens more extensively, and lacerate the capsule also more freely; in many cases of the mixed form of cataract it will be enough to do this, although the operation may require to be repeated once or twice; but, in a certain proportion, we find, that the opaque lens will not undergo the process of absorption, at any rate if it be left in situ; whereas, if we depress the remainder, it will, for the reasons above mentioned, remain after the preliminary operation, below the axis of vision, and, if it do not become readily absorbed, will, at any rate, give rise to no irritation. In such cases, we may, with confidence, expect the patient to recover good vision, whereas in many cases, particularly where the native practitioners have operated, we find that the lens—bulky as it is often in the native's eye, compared with the posterior chamber and the globe—having been at once depressed has pressed upon the retina, or the iris, or contiguous parts, and done irreparable mischief. This I have found very rarely to have happened in my practice, where depression has been employed after at least one attempt at division, in the manner above reported.

"In a certain but not large proportion of cases, treated by this simple method, I have found no other operation necessary; the patient has attained good vision. But, in general, it has had the effect of slightly improving sight, and this will be seen in the cases above reported, often within a few days, or at any rate a moderate period (from 5 to 27 days). By the time a month has elapsed, I often see that a patient who before had hardly a glimpse of light, can see much more light than before; or, where he could not previously see objects, can make them out distinctly; as soon as it becomes evident that the improvement is not progressive, I then proceed to repeat the operation or adopt such means as may be found necessary. Often the patient seems to be so well satisfied with the result of the simple operation, that he does not stay to have anything further done. There is another advantage connected with this procedure; this is, that, if it be carefully done, there is not a possibility of the nucleus of the lens becoming dislocated. Sometimes we unexpectedly meet with a hard nucleus, or, at least, one sufficiently solid to cause great mischief, if lying in the chamber, with a rather soft circumference; but however much the soft part may become removed by absorption, the nucleus in this method cannot escape through the small aperture of the capsule: on this account the operation is not contra-indicated in cases where we suspect the nucleus to be hard, as we may, at any rate, reduce the bulk of the lens, and that I look upon as a point of great importance, particularly when our practice lies with the Bengallees, with whom the more perfect operation of extraction is, as far as my experience goes, the least successful of any. A small body, even if hard, will lie in the posterior chamber without giving rise to irritation, when a larger one even less solid, would cause destructive inflammation of the organ."

[It is to be regretted that Prof. Martin has not explained how, in his operation, the aqueous humour is allowed access to the lens, while the anterior capsule is left untouched.]

MIDWIFERY.

51. *Menstruation during Pregnancy.* By Dr. ELSASSER.—This contribution to a disputed topic is founded upon 50 cases, extracted from the journal of the Stuttgart Lying-in Hospital, cases which are said to rest upon the most certain information. The subjects were 15 primiparæ and 36 pluriparæ, who, with the exception of two women (aged 36 and 41), were between 20 and 30 years of age. Of the 51 children born, 34 were boys and 17 girls, 36 being mature and 15 immature. The menstruation during pregnancy occurred in 50 women, in the following manner: Once in 8, twice in 10, three times in 12, four in 5, five in 6, eight in 5, and nine in 2. In 13 cases the peculiarities of the rhythm of the discharge were inquired into, and the rhythm was found regular in 4, in 1 it occurred at the sixth week, in 3 there were pauses between the epochs, in 2 the menstruation first appeared after the second month, in 2 after the fourth, and in 1 after the fifth month. In one case the menstruation first appeared in the middle of gestation, and henceforth came on every four weeks, lasting three or four days. The child perceived but feebly at first, was strongly felt during the last four or five weeks. Hemorrhage occurred twice within a week before delivery, but a mature, living infant was born. Indications as to the amount of discharge were furnished in 26 cases, and in 18 of them it was less than in the non-pregnant condition. The weight of the 35 mature infants varied from 5 lbs. to 9 lbs.

Dr. Elsässer observes that although he is unable to state the proportion of cases in which menstruation occurs during pregnancy, it is by no means so exceptional an occurrence as supposed by some authors. It occurs more frequently in pluriparæ than in primiparæ; and it takes place much more frequently during the first half of pregnancy, and especially in the earlier months of this, than during the latter half. The amount of discharge too is smaller than in the normal menstruation. The duration of the pregnancy was normal in more than two-thirds of these cases (36), while in nearly one-third (14) of the cases it was interrupted, in 4 during its first, and in 10 during its latter half. As regards the development of the child, which by some authors has been supposed to be impeded by the occurrence of menstruation, this was found to be normal, or more than normal in three-fourths of the cases.—*Monatschrift für Geburtskünde. Bd.*, 73.

52. *Premature Discharge of Liquor Amnii.*—Dr. T. H. BABINGTON, Surgeon to the County Infirmary, Londonderry, states (*Dublin Hospital Gaz.*, Nov. 15, 1858), that he was recently consulted by a lady, mother of four children, who informed him that in her first pregnancy the liquor amnii was discharged two months before the birth of her child. In her second pregnancy the same occurrence took place in the sixth month. In the third, in the fifth month, and in the fourth, in the fourth month.

The children were all born alive.

53. *Watery Discharge from the Uterus During Pregnancy.*—Dr. HARVEY made the following remarks on this affection at a meeting of the Cork Med. and Surg. Soc., Dec. 9, 1857: "In some books on Midwifery, watery discharge from the uterus is noticed as amongst the diseases to which pregnant women are liable. A clear, limpid, colourless fluid, oozing in quantity from a few ounces to pints daily, flows away, sometimes stopping for a short time, and recommencing; and in the majority of cases it continues nearly, or fully to the time of delivery. The abdomen does not appear palpably reduced by these discharges, and a living child is commonly born at or near the full time. In the greater number of instances, also, there is evidence of the usual quantity of liquor amnii being present on the supervention of labour. Dr. Alexander's case, given in the third volume of the *Medical Commentaries*, shows this very prominently. In a case by Dr. Petel, also, in the *Gazette des Hôpitaux* of July, 1838, the liquor amnii is specially mentioned as normal in quantity.

"What is the source of this fluid, discharged, as it is, to the amount of hundreds of pints in the course of a few months? The supposition of its coming from the cervical glands of the uterus, or from the vagina, both of which have been assumed as sources of it by different authorities, appears altogether unlikely from the nature of the fluid, its quantity, and its mode of coming away in gushes of considerable quantity at a time. That it could come from the space between the decidua and chorion, or between the chorion and amnion, we have no pathological facts, so far as I am aware, to warrant our supposing such a source for the flow; whilst in the natural condition of parts such spaces do not exist; as, at a period of pregnancy before these discharges commonly show themselves (say the sixth month, or thereabouts), the cavity between the chorion and amnion has disappeared; and we know that the chorion and decidua are in contact throughout.

"Under these circumstances we seem driven to the conclusion that the amnion must be the source of this flow; that there may be occasional solutions of continuity in this membrane, admitting of discharges from time to time, which either close again, or admit by the mechanical relations of the bag to the neighbouring parts of the amnion, refilling to a certain extent by a fresh secretion of its peculiar fluid. In confirmation of this view may be mentioned cases recorded by Dr. Denman, Professor Burns, of Glasgow, and Dr. Pentland, of Dublin, in which the amnion is said to have given way from fright, or other sudden shock, the waters being discharged without labour coming on. All these considerations tend rather to the view that the escaping fluid may be liquor amnii than to any other which has been propounded. In the case which I am going to relate the symptoms were similar to those which were present in the cases of watery discharge which I have been noticing, and in this instance, as will be seen, the flow was undoubtedly amniotic.

"Mrs. ———, mother of several children, was, for more than a year, the subject of heavy sanguineous discharges, which were so little influenced by the treatment adopted that the existence of polypus was thought possible. An examination revealed considerable congestion of the os and cervix uteri, with superficial ulceration, which gave way to treatment generally and locally applied. During last summer her health was considerably improved, but occasionally menorrhagic attacks, which latterly observed more or less closely the monthly periods, showed themselves. Matters were going on thus when she suffered a considerable shock by her eldest boy meeting with a severe accident, in which his arm was fractured. On that day, for the first time (six weeks before delivery), she had a sudden gush of clear watery fluid from the vagina, and since that time to the date of these notes (5th November), she was scarcely free from it; it would diminish or nearly stop for a few days at a time, to come on again in gushes, and in considerable quantity. The quantity escaping in one of these was seldom less, and generally more, than half a pint; and on the late occasion, when the flow was accompanied by a heavy sanguineous discharge also, she thinks the combined amount was fully a quart. It came on in the horizontal position as well as in the erect, and apparently without any cause. The size of the abdomen did not appear much affected by these at any time.

"The occurrence of the watery discharge suggesting the probability of pregnancy, notwithstanding the menstrual changes which had been going on with some regularity, and that, if pregnancy did exist, the ovum might have suffered hydatid degeneration, I proposed an examination for the purpose of ascertaining the point. I found an abdominal tumour occupying the hypogastrium to above the umbilicus, and on laying my hands over its surface, it gave a good example of the value of a diagnostic indication lately suggested by Dr. Oldham; it afforded distinct evidence of its being uterine by gradually and regularly hardening under my hand. The movements of the child were also felt, and fœtal pulsation, distinctly heard by the stethoscope, put an end to all doubts.

"I told the lady that she had passed some six or near seven month of her pregnancy without being aware of it, and that her labour would probably come on prematurely, all of which she entirely disbelieved, and I could not induce her to make the necessary preparations. Two days after, I was called to her —the first stage of labour having set in with unusual distress and irritation; the pains peculiarly sharp and unbearable; the os uteri was hard and unyielding, and the breech, presenting in the second position, was felt in close contact. I immediately put her on antimonial solution, notwithstanding which the os uteri took over three hours to relax. After a first stage of about four and a half hours, and a second of less than half an hour, a male child, of scarcely seven months' growth, was born. The presenting hip and buttock were perfectly black, evidently from the direct pressure to which they had been subjected, in consequeuce of the loss of the liquor amnii. None whatever escaped with the child, and the sanguineous discharge was also unusually scanty. I do not think I ever witnessed so dry a labour."—*Dublin Quart. Journ. Med. Sci.*, Feb. 1858.

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54. *On the Action of Galvanism upon the Contractile Structure of the Gravid Uterus, and its Remedial Powers in Obstetric Practice.*—Dr. F. W. Mackenzie read before the Royal Medical and Chirurgical Society, Feb. 23d, 1858, an interesting paper on this subject.

In his introductory remarks, he drew the attention of the Society to the present state of professional opinion respecting the effective and remedial powers of galvanism upon the gravid uterus, and he pointed out the very different conclusions which different observers had arrived at. In this divided state of opinion, it had appeared to him that some further investigations might be usefully undertaken, and he submitted that two questions of a preliminary nature require to be decided before the agent could be satisfactorily employed in midwifery: 1st. The nature of the influence exercised by it upon the contractile structure of the gravid uterus; and 2d. The best mode of applying it so as to obtain the full benefit of such influence. Believing that these questions could not be satisfactorily solved by observations made exclusively upon the human female, the author had planned and instituted some experiments upon the gravid uterus of the lower animals, in which the organ was exposed, and the exact influence exercised by it was observed. From these experiments, it was shown that galvanism exercises a remarkable and peculiar influence upon the uterine fibre, and it further appeared, after many observations, that this was most powerfully exercised when the galvanic current was directed longitudinally through the uterus from the upper portion of the spinal cord in a sustained and continuous manner. The local application of galvanism to the uterus was less effective; individual shocks produced no appreciable effect upon it, and a current directed transversely through the organ produced only a partial contraction of it in the direction of the current. Guided by the information thus obtained, the author had employed galvanism in the manner suggested by these inquiries in several very critical cases with remarkable success. The first referred to was that of a lady who had repeated floodings, in connection with an early abortion, owing to an imperfect separation and expulsion of the ovum. In this, every available means had been tried to stimulate the uterus and control hemorrhage without success, and the patient's condition had, at length, become highly critical. In this emergency, a sustained current of electricity was directed longitudinally through the uterus from the upper portion of the spinal cord, and, under its influence, the cervix uteri became relaxed, and expanded after the first application, and uterine action set in after the second, which was followed by the expulsion of an organized membrane, upon which the hemorrhage ceased, and the patient rapidly recovered. The second was a case of placenta prævia, in which several alarming hemorrhages had occurred before labour had commenced. In this, a sustained current, applied in the manner stated, for six hours, not only prevented any further hemorrhage, but so accelerated the dilatation of the os uteri that the hand was readily introduced, and delivery completed with safety to the patient, although the child, from the extensive separation of the placenta, was stillborn. In a third, excessive hemorrhage had occurred in a primipara in the last month of pregnancy, and, as the placenta was felt to be attached to the cervix uteri, it was thought desirable to bring on delivery. With this view, a sustained current was applied for three hours; the hemorrhage was almost immediately arrested, and the labour had advanced so rapidly, that, in a few hours afterwards, it was completed by the birth of a living child. The author referred to other cases, in which he had successfully employed galvanism in obstetric practice, and, with reference to those related, submitted that they appeared to him to warrant the three following conclusions:—

1. That a sustained current of electricity, of moderate intensity, passed through the gravid uterus in the manner described, exercises a remarkable influence in increasing the tonicity and contractility of the uterine fibre.

2. That, in such increased tonicity or contractility of the uterine fibre, so excited and sustained, we have a powerful and reliable means of moderating and controlling uterine hemorrhage, whether of the accidental or unavoidable variety, and of simultaneously accelerating the dilatation of the os uteri and the general progress of the labour.

3. That such sustained current of electricity may be continued for a lengthened period, when the object to be attained requires it, without any appreciable pain or inconvenience to the mother, or danger to the child.

In conclusion, the author briefly considered the objections which had been raised to the employment of galvanism in obstetric practice, and pointed out some fallacies, as he believed, in the conclusions which had been arrived at by Dr. Simpson.

Mr. Foster said he was present at one of the cases referred to by the author, and went to it with a prejudice against the use of galvanism in the manner described, believing that it could have no effect over the contraction of the uterus, and in preventing hemorrhage in placenta prævia. The result, however, satisfied him that Dr. Mackenzie's experiments deserved the careful attention of all who followed obstetric practice. He had never seen anything that controlled the hemorrhage of placenta prævia so perfectly.—*Med. Times and Gaz.*, March 6, 1858.

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55. *Influence of Pregnancy and Delivery on Insanity.*—M. Marcé thus concludes an interesting paper illustrated by cases. 1. We cannot protest too strongly against the practice of those physicians who advise or allow pregnancy in insane women, for it results from the facts mentioned in this paper that, in the great majority of cases, pregnancy and delivery, so far from exerting a favourable influence on insanity, seem, on the contrary, to hasten on the progress of the disease towards dementia. If in certain exceptional cases (2 in 16) pregnancy has suspended the progress of the disease, the improvement has been only temporary, and the insanity has reappeared after delivery. 2. In some few cases (4 in 16), remarkable especially for the predominance of erotic symptoms, pregnancy has exerted a beneficial influence on the cure. 3. When insanity becomes developed during pregnancy, it very often remains incurable, even after delivery, or is cured so long after that no influence can be attributed to the latter in the termination of the nervous affection. 4. Sometimes, however (3 in 10 cases), the disease disappears after delivery, and these cases must be regarded as sympathetic. 5. Delivery in the insane is often remarkable for the slight amount, or even complete absence of pain.—*Annales Medico-Psychol.*

56. *Curative Effects of Pregnancy on Prolapsus Uteri.*—M. Brachet relates some cases in proof of the fact, that while the ordinary modes of treating prolapsus uteri by means of pessaries, abdominal belts, and the like, almost always fail, a cure may not unfrequently be procured if the patient fall pregnant again, and then be confined to her bed for a period not less than forty days after delivery.—*Rev. Med.*, 1837.

57. *Unconscious Delivery.* By Geo. Smith, M. D., Residency Surgeon, Hydrabad, Deccan.—Mrs. —— was daily expecting her confinement. On the 24th of April last, I was sent for suddenly; and, on reaching the house, found the child born and lying below the bedclothes, close to the body of its mother; the cord was entire, and the placenta within the vagina; the delivery had taken place suddenly. During the night preceding her delivery, this lady had felt quite well, she rose several times to attend to her sick child; about 5½ A. M., she walked from her house to the bungalow in which she was confined. When she reached the bungalow, she lay down upon the cot, and experienced a *very* slight sensation, as if her bowels were about to be relieved—a feeling, as if something had touched her body followed, and caused her to ask the ayah to lift the bedclothes; when, to the surprise and alarm of both, the child was found entirely extruded. Mrs. —— was awake, and yet so little was her notice attracted by her feelings, that the delivery took place unconsciously. Had she been standing or seated on her night chair, the result would, probably, have been instantly fatal to the child. Had she been asleep, the child, I am satisfied, would have been suffocated. This was her second child, her first was born with the usual pains, after a labour extending over six hours. I have the most implicit confidence in the patient's statement, having made searching inquiries into the case. The child, a female, was a little, but not much, undersized. Dr. Montgomery relates an instance of unconscious delivery during sleep; this case is still stronger, in proof that delivery may, at times, take place unconsciously, for the patient was awake, and expecting hourly her confinement, consequently alive to the slightest approach of symptoms indicating the commencement of the parturient action. This case has a double aspect, one medical, the other medico-legal. I have seen females (not primiparæ) delivered within half an hour of the recognized commencement of uterine action, and with what I considered the *minimum* amount of uneasiness, through the whole of which the woman might have slept, undisturbed; but the expulsion pain, causing the extrusion of the head, was always so well marked, as to have roused the patient, had she been in ordinary sleep. The case recorded above shows that the whole process may be carried on and completed, without sensible uneasiness.—*Indian Annals*, April, 1857.

58. *Complete Inversion of the Uterus of nearly Twelve Years' Duration, successfully treated.*—Dr. Tyler Smith read before the Royal Medical and Chirurgical Society (April 13th, 1858) a case of this. The author commenced his paper by referring to two cases of inversion of the uterus, published in the *Medico-Chirurgical Transactions*, in one of which extirpation was practised with recovery of the patient, while in the other, treated by palliative measures alone, death ensued eighteen months after delivery. He brought forward the present case as illustrating a new principle of treatment. Hitherto the cases in which reinversion has been accomplished have been chiefly limited to cases of recent origin. It has been held that unless the inversion could be reduced soon after the accident, there was little hope of accomplishing it, death generally occurring at periods varying from a few months to five or six years. The operation of extirpating the uterus by ligature is a very serious one. Of thirty-four cases of extirpation, twenty-seven recovered and seven died; in nine of these cases the inverted uterus was mistaken for polypus. The subject of the present case was delivered, at the age of eighteen, of a first child, and inversion occurred at that time, but was not suspected by her attendant. When at length an examination was made, a tumour was found in the vagina, but the opinion of those who saw the case was divided between polypus and inversion. Flooding continued to a greater or less extent for nearly twelve years, during which time she was never for a single day free from sanguineous

discharge. All attempts at replacing the uterus by those who considered it a case of inversion failed. The patient was sent to the author of the paper in September, 1856, by Mr. Griffith, of Port Madoc, North Wales, under whose care she had been for a short time. The symptoms of anæmia existed in the most marked degree. She was subject to epileptiform and convulsions, and frequent faintings. The drain of blood seemed to replace the other secretions to a considerable extent. She passed very little urine, and frequently went twenty-four hours without micturition. On examination, the uterus was found to be completely inverted, the neck of the uterus and the os uteri being very small and rigid. The author determined to attempt its reduction by continuous pressure, with the intention of dilating or developing the os and cervix uteri. With this object the right hand was passed into the vagina night and morning, and the uterus squeezed and moulded for about ten minutes at a time. Chloroform, which had been found so useful in cases of inversion of shorter standing, was not used, because of the feeble state of the heart and circulation, and the comparative absence of pain. In the intervals between these manipulations, in which the author was assisted by Dr. Vernon, the vagina was distended, and firm pressure exerted upwards by a large air pessary. These means gradually dilated the os uteri to such an extent as to allow of the partial return of the uterus, and on the eighth day from the commencement, complete reinversion took place. The subsequent recovery of the patient was perfect. She has since menstruated regularly, and is in excellent health. The author combats the prevailing notion as to the immobility and unyielding condition of the os uteri in long standing cases of inversion, alluding to the readiness with which the uterus increases, diminishes, and alters in size, under appropriate stimuli. No amount of force will suddenly reduce a case of chronic inversion, but he believes that by air or fluid pressure, so as to convert the fundus and body of the uterus into a wedge, the os uteri may be slowly enlarged in any case so as to admit of reinversion. Since the presentation of the paper, the author has been informed that the patient is now in the fifth month of pregnancy. The paper concluded by a reference to other conditions, in which air or fluid pressure had been of service, such as the arrest of flooding in abortion, placenta prævia, the expansion of the pelvis in cases of high deformity from mollities ossium, and the induction of premature labour.

The President said the author had observed in his paper that, owing to the condition of the patient, he did not think it prudent to use chloroform. He was evidently aware that cases had been recently recorded in which inversion of the uterus of long standing, though not so long as in the present instance, had been completely cured by pressure with the hand, under the influence of chloroform. He wished to ask the opinion of the author as to whether the use of chloroform would not cause the pressure to be effected in a very much shorter space of time, with much less distress to the patient, and perhaps even with more safety.

Dr. Tyler Smith said his reason for not using chloroform was, the extremely feeble state of the circulation. He should have been afraid to keep the patient under the influence of chloroform for the time necessary to manipulate the uterus. Besides, the os uteri was so small that it would have been impossible to have done it at one or even at several sittings. At first, he could make no impression whatever, and he believed he could not have returned the uterus by pressure with the hand alone. It was only after the continuous use of the air pessary that he found the tumour receded at all. The reason why the pessary was forced through the os uteri, he believed was, that by the influence of the pressure, the os uteri was developed. It was by the process of development, rather than by the operative pressure, that the uterus was reinverted. Then, again, the operation not being painful, there was no bar to the use of considerable efforts to reinvert the uterus. The process of reinversion had often been tried in her case.

The President: With chloroform?

Dr. Tyler Smith: Without chloroform. The use of chloroform, he conceived, would be in permitting the relaxation of the os uteri; but in this case the os uteri was so small, that dilatation at any one sitting would not, he believed, have effected the object.

Dr. Snow did not think that the slow state of the circulation need have been any bar to the administration of chloroform for ten minutes or so during manipulation. He had given chloroform to several patients, in operations for hemorrhoids, who were reduced to the lowest state from previous hemorrhage, and anæmiated to the greatest degree, and he never saw any ill effects from the chloroform in those cases.

Dr. T. Smith asked Dr. Snow if he would use chloroform for a patient subject to repeated faintings. He once saw chloroform used for the extraction of teeth in the case of a lady who had lost a very large quantity of blood by abortion, and he certainly feared that she would die. From what he had seen in that and in other cases, he should fear the use of chloroform for a patient who had lost blood to such an extent as to be frequently subject to fainting. The patient whose case he had described scarcely passed a day without fainting.

Dr. Snow believed that a patient who was liable to fainting, would get through an operation better with chloroform than without it; but of course there was a limit to what might be done either with or without chloroform, when the patient was in an extreme degree of faintness.

Dr. Mackenzie said the author had described the case as one of complete inversion, but it appeared to him (Dr. Mackenzie) that it scarcely came within that category. The late Dr. Hamilton, of Edinburgh, published a case of complete inversion, in which, upon simple treatment, the patient was enabled to live fourteen years with little or no inconvenience. The distinction he laid down between partial and complete inversion was, that partial inversion was attended with hemorrhage, while complete inversion was not necessarily so attended. The history of the case, as detailed by Dr. Smith, brought it within the category of cases that he (Dr. Mackenzie) had seen, in which the inversion was partial, in which the body or cervix of the uteri was constricted by the os, and in which hemorrhage necessarily occurred. He had lately met with a case of inversion that ended fatally. He was not at the time aware that inversion or reposition had been effected after a lengthened period; but he found on consulting various journals that from periods averaging from three months to eighteen months or two years, reposition had been effected under chloroform without difficulty by mere manipulation.—*Med. Times and Gaz.*, April 24, 1858.

59. *Rare Case of Fracture of the Sternum during Labour, with Observations.* By Drs. F. Lucchetti and G. Posta.—Two French surgeons, Comte and Martin, in the *Classical Dictionary of Medicine and Surgery*, Venice,[1] relate a case of transverse fracture of the sternum, which occurred in the last moments of labour in the person of Madame Pacton, aged 35, pregnant for the first time, and who died on the fourteenth day of childbed. We have had the opportunity of witnessing, though with better fortune than the French surgeons, another case of this nature which terminated in recovery, and which we publish, both on account of its singularity, and as a warning to nurse-tenders to be more careful in preparing the bed for their patients, as we believe that in the present instance the bad system adopted by the midwife contributed much to produce the accident in question.

Case.—Signora Maria Grossi, of Roccagulielma, in the District of Gaeta, aged 25, of a sanguineo-nervous temperament, well formed both as to the pelvis and her person generally, having arrived at the full term of her first pregnancy, began, on the morning of the first day of the present year, 1857, to feel the pains of labour, which increased gradually in frequency and intensity, until at 3 o'clock in the afternoon the period of expulsion had arrived. The patient, uniting her voluntary efforts to the spontaneous and natural contractions of the uterus and of the abdominal muscles, suddenly perceived a crash and intense pain in the antero-superior region of the chest, and in a few moments gave birth to a living female child.

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[1] Vol. xiv. p. 70.

The expulsion of the placenta was easy, and unattended with inconvenience: however, after the labour the pain in the same region increased so much that the patient's relatives were obliged to apply for medical aid.

Although fracture of the sternum is most easily diagnosed, manifesting itself, in addition to the phenomena of disturbed respiration, by signs evident to the touch, the eye, and the ear, the accident was considered to be one of simple muscular strain, was neglected for a week, and the patient was not subjected to treatment.

The symptoms of the thoracic lesion becoming threatening, Dr. Lucchetti was called in, who, arriving on the evening of the seventh day after delivery, found the patient sitting up in bed, unable to lie down either on her side or back, nor could she, without suffering, raise her arms; her face was turgid and almost livid; her tongue was red, and somewhat loaded. There was very high fever; the pulse was hard, full, frequent, and occasionally dicrotous; there was urgent thirst; the bowels were constipated; the secretion of milk was regular. Respiration was difficult and unequal, and was attended with so much pain, and such a sense of weight and oppression, as to lead to the apprehension that suffocation was imminent. The patient was tormented with a troublesome and frequent cough, every return of which renewed the sense of crashing and the intense pain in the chest, a little yellowish mucus being with difficulty expectorated. The sweat of agony appeared at uncertain intervals upon the forehead and neck, but the skin of the rest of the body was unusually dry. The seat of pain, which was precisely the middle of the upper part of the sternum, presented an elevation caused by the fracture of that part of the bone, the superior broken portion projecting, while the inferior was depressed. The shocks of the cough moved the bony fragments, and the crepitation, which is the surest indication of fracture, was audible to the bystanders; hence it was evident that the sternum had been fractured transversely in its upper part.

In the evening, an emulsion of gum Arabic with syrup of digitalis was prescribed, and several leeches were applied to the affected part. These means were attended with slight and transient relief; but great advantage was obtained during the night by a copious bleeding from the arm, as, in consequence of the diminution of the cough, and the moderation of the more troublesome symptoms produced thereby, the patient was able to enjoy a few hours' sleep.

The following day Surgeon Posta being called into consultation, also recognized the fracture, which had not yet been reduced; this was now done with the assistance of Dr. Lucchetti and a young student in medicine, Andrea Winckler, after which a suitable bandage was applied, &c.

At the end of thirty-five days we found Signora Grossi cured, a slight elevation alone remaining at the seat of fracture, produced by a strong and consolidated callus; she is now able to attend to her domestic duties.

Observations.—If traumatic fracture of the sternum is a rare case, it is immeasurably rare to see such an accident follow the efforts of parturition. Traumatic fracture of the sternum is the effect of the immediate action of bodies falling on this bone, breaking it, and consequently causing severe contusions of the soft parts, and usually profound disturbance of the subjacent thoracic viscera. All surgical observers have seen in fractures of the sternum extensive effusions in the mediastinum, the lungs, and the heart.

Fracture of the sternum, from whatever cause, is easily recognized, in consequence of the bone being wide, flat, tolerably long [and superficial]; its fragments are felt on very slight pressure, and the well-marked crepitus renders it impossible to doubt the nature of the accident.

In fracture of the sternum respiration is painful and difficult; troublesome cough, oppression of the chest, sanguineous expectoration, palpitation of the heart, and sometimes emphysema, are present. The patients are greatly distressed, nor can they lie on the back without producing signs of impending suffocation. Simple fractures of the sternum, such as those occurring during the pains of labour, are easily treated; the fracture being reduced, immediate local relief is obtained by covering the fractured portions with pledgets dipped in vegito-water. A two-tailed serrated bandage crossed, leaving the mammæ free, is sufficient to retain the parts *in situ*. In the case of our patient the secretion of milk continued normal up to the period of cure.

The most advantageous position in cases of fractured sternum is to remain seated in bed, the head and the thorax being elevated, and the thighs flexed, so as to avoid the inconvenient tension of the abdominal muscles, which often gives rise to displacement of the portions of bone.

Absolute rest must be enjoined, much speaking is to be prohibited, and such efforts as coughing or sneezing must be avoided as much as possible. Three cushions, one at the back and two at the sides of the thorax, will be advantageous in maintaining the patient in the proper position.

Lastly, it may be asked, how can fracture of the sternum occur during the parturient efforts?—a question, the answer to which ought to be interesting, not only to surgeons, but to all obstetricians, and especially to the numerous midwives, who are too indolent, and superstitiously place their patients in strange, disadvantageous, and injurious positions.

It cannot be denied, that during pregnancy the size of the abdomen enormously distends all the tissues of the latter, and the muscles in general acquire a high degree of tension, as do all the abdominal muscles and those attached to the sternum; this anatomical condition may therefore become a concurrent cause of fracture of the bone in question. In fact, scarcely do the expulsive uterine efforts commence, when all the muscles are put upon the stretch, and the sternum is drawn a little downwards; consequently, if, instead of giving to the patient a position calculated rather to moderate this tension, she be placed in another likely to augment the downward traction of the bone, fracture of the latter, if it occurs, may be attributed to the faulty position in which the woman is placed.

Signora Grossi would not have suffered fracture of the sternum if the midwife had not foolishly placed her on the ground, or, at best, upon a mattress; and had she not, when the moment of parturition arrived, been raised upon her hands, made an effort with her arms, and counter-extension with the thoracic muscles, the abdominal muscles at the same time drawing the sternum forcibly downwards; the bone was thus immediately acted on by two forces, the one thoracic and superior, the other abdominal and inferior; it consequently gave way in its upper third, and a fracture was produced, which might have caused death. The only means of preventing the recurrence of such accidents is to warn the midwives that patients ought to be delivered in bed, and, still better, in the obstetric bed; but when this is not to be had, and if it is wished at all risks to deliver in those wretched chairs, against which every surgeon ought to exclaim, it is necessary that the midwives should at least know, that in any position the legs ought to be in a state of relaxation on the thighs, and that the thorax of the patient should be a little elevated and supported by a cushion. Without such sound principles, parturient women, especially in the country, will be in one or other mode perpetually sacrificed.—*Dublin Quart. Journ. of Med. Sci.*, Nov., 1857, from *Bulletino delle Scienze Mediche di Bologna*, April, 1857.

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60. *Ruptured Uterus treated by the Free Exhibition of Opium.*—Dr. Harvey communicated to the Medical and Surgical Society of Cork (May 13, 1857), the following interesting example of this:—

"Mary Murphy, aged 38, a spare but healthy-looking woman, was admitted into the Lying-in Hospital, stated to have been in rather strong labour of her third child for the last thirty-six hours; former labours reported to have been natural, and of about nine hours' duration. When seen at 2 o'clock P. M., the pains were strong and frequent, and she felt debilitated. Pulse about 100, weak; bowels confined; no difficulty in passing urine; the head was found occupying the upper part of the cavity of the pelvis; presenting part œdematous, and making slow advance; liquor amnii had been dribbling away since the day before. She was ordered a turpentine enema and some broth. On being suddenly summoned, about 7½ o'clock in the evening, we found the woman in a state of great prostration; the pains had ceased, and the pulse was exceedingly rapid and weak; the head of the child had receded out of reach of the fingers, a large globular tumour was felt in the epigastrium, and there was already some abdominal tenderness. She was not conscious of any sudden change of movement having taken place. It appeared that she had a severe fall, with a basket of bread on her back, some weeks before.

"On consultation with Drs. Finn and Tanner, it was determined to attempt delivery by turning. This was easily accomplished, all being loose in the cavity of the uterus, the fœtus still remaining partially within it, its head lying in a lax pouch over the os pubis. There being some difficulty in extracting the head, it was perforated behind the ear, and delivery thus accomplished. The placenta followed readily, and there was little hemorrhage throughout. It was considered advisable that I should reintroduce my hand, with a view to free any intestine that might have got engaged in the wound, when I discovered a large oblique rent in the right side of the fundus, situated anteriorly, at least three inches in extent; my fingers passed freely into the peritoneal cavity.

"The patient was very much exhausted after the operation. The pulse was then 124, small and weak; surface perspiring, but not cold. There was none of the brown vomiting frequently observed in such cases. A moderately tight bandage was applied, and she was ordered to take two grains of opium immediately, and one grain every hour afterwards; to have arrowroot and weak tea.

"We desired that we should be sent for if she were alive at 7 o'clock in the morning.

"Second day, 8 o'clock A. M. A quiet night, but had little sleep; countenance not much sunken; abdominal tenderness rather increased; pulse 100, soft; tongue moist; has passed water. Powders regularly taken up to 6 o'clock.

"2 o'clock P. M. Has been dozing a good deal; tympanitis and rather more tenderness; pulse 104, soft, but rather fuller; respirations 18; refers all her uneasiness to the epigastrium. Twenty leeches to the abdomen, to be followed by fomentations, and afterwards a large poultice. Powders continued.

"8¾ o'clock P. M. Has continued to slumber occasionally, but is easily aroused, and perfectly collected; considerable relief from the leeching; tympanitic distension rather increased; countenance better. Has taken a good deal of arrowroot. No vomiting; urine freely passed. No powders have been taken since 3 o'clock, owing to a mistake. She is to take one grain of opium every second hour, and half a drachm of mercurial ointment is to be rubbed into the arms every eighth hour.

"Third day, 8 o'clock A. M. Slept a good deal; some vomiting of grass-green fluid this morning; lochia natural; pulse 108, soft. The powders to be continued every fourth hour; cataplasms and mercurial ointment to be continued.

"9 o'clock P. M. Occasional vomiting still; tympanitis and tenderness rather diminished; lies on both sides sometimes; urine free.

"Fourth day, 11 o'clock A. M. Some sleep, but countenance a good deal sunk this morning, with dampness and diminished warmth of skin; pulse 120, weaker; was allowed to indulge too freely in drinks, and has vomited considerably more in consequence. A blister to be applied to the abdomen, and if the vomiting continue in the evening, an injection of broth, with half a drachm of tincture of opium, to be administered; to take a dessert-spoonful of chicken-broth every half hour.

"9 o'clock P. M. Vomiting has ceased, tenderness and tympanitis perceptibly diminished; countenance improved; pulse 116, stronger; lochia have disappeared; dislikes her powders. To have the following pills: Opium, twelve grains; extract of hemlock, a scruple, to be divided into twelve pills; one to be taken every third hour; the cataplasms and mercurial ointment to be continued; and to have an increased quantity of broth.

"Fifth day, 11 o'clock A. M. Night restless, and yet her countenance is improved; no appearance of mercurial action; blistered surface dressed with a drachm of mercurial ointment; frictions discontinued; pills to be continued.

"9 o'clock P. M. Puffing and tenderness less than at any time during her illness; complains slightly of her mouth; continue treatment.

"Sixth day. Three full, free, feculent evacuations; pulse 100, rather weak; tympanitis nearly gone; broth given more freely; biscuit, with milk; the pills continued.

"Seventh day. Bowels free; tongue clean; little tenderness, except in the neighbourhood of the rent; pills to be omitted, and the following draught to be taken at night: Battley's sedative liquor of opium, twenty minims; camphor mixture, eleven drachms; syrup of orange, a drachm; mix.

"Eighth day. Slept well; no pain; tenderness nearly gone. Is tired of broth, tea, and biscuit; an egg beaten up with a dessert-spoonful of wine, as often as four times in the twenty-four hours.

"Twelfth day. Has continued to improve, with slight variations, during the last four days; debility now appears to be the only source of complaint. Has continued her draughts of Battley's solution, and her wine. The following pill to be taken every fourth hour: Sulphate of quinia, two grains; extract of gentian, two grains and a half; mix.

"Evening. Pressing hard to be allowed home, and feigning inability to speak except when she wants to urge her point; bowels rather freer. Pills to be continued, and an opiate enema to be administered at night.

"Thirteenth day. Has obstinately refused her wine and pills since 6 o'clock last evening, and would not submit to the enema, notwithstanding which she has had a pretty good night; tongue natural; pulse 96, of fair strength. Discontented and difficult to manage all through her illness, she now resolutely refuses all nourishment and medicine, though told her recovery would as certainly follow compliance, as death must the contrary.

"9 o'clock P. M. In the afternoon, about 3½ o'clock, was induced by the priest to take some broth and a pill; she is, notwithstanding, evidently sinking to-night; the extremities are cold, and the pulse can scarcely be felt; she is perfectly collected, and keeps to her resolution.

"Fourteenth day. Died about 4 o'clock this morning.

"*Examination, sixteen hours after death.*—A very hurried and unsatisfactory examination was, with great difficulty, obtained by candlelight, in the presence of her father and mother. There was no distension of the abdomen; intestines in the neighbourhood of uterus were extensively agglutinated to it, to each other, and to the abdominal parietes, by lymph in process of organization; a few small sacculi, formed by lymph inclosing spots of half an inch to an inch in diameter, where the intestines did not touch the parietes, contained purulent matter, but the quantity, in all, was by no means great; uterus about two inches and a half or three inches in diameter, adhering, on all sides, more or less to the neighbouring viscera; the rent, occupying right side of fundus, appeared to have closed throughout the whole of its length within, and through about two-thirds of the substance of the uterus from within outwards; externally it had the appearance of a granulating, incised wound, which had not been evenly closed in the first instance, pouting a little towards the peritoneal surface; its length now appeared about an inch, or perhaps a little more, say two-fifths, of the diameter of the uterus.

"It was, of course, impossible to procure the specimen for preservation.

"The circumstance most worthy of attention in the foregoing case is the fact, that though leeching, mercurials by the skin, and fomentations, were availed of as *auxiliaries*, the main treatment was the full exhibition of opium, so as to keep the patient continually under its influence. The quantity taken was large—fifteen grains in the first twenty-four hours, and fifty grains in all during the first week of her illness, besides a considerable quantity afterwards, in various forms—and yet, during the whole period, none of the poisonous effects of the remedy were observed; no narcotism, no delirium; in fact, there was entire absence of cerebral disturbance, or of any of the unpleasant consequences which so frequently follow from a grain or two taken under other states of the system. The bowels, after a slight interruption, acted fully and freely, and the urinary and cutaneous secretions were natural throughout. But for the dogged obstinacy of the woman herself, there seems little doubt but that she would have added one to the still small list of recoveries from ruptured uterus; the case was still sufficiently successful, however, to show the value of opium in such cases; its sustaining and quieting effects gave nature the opportunity to make the effort at reparation which could scarcely have been effected otherwise.

"Persons not unfrequently sink without a rally under the shock consequent upon great and extensive injuries. Might not opium, given on the principles advocated above, afford such patients a chance of reaction, and ultimately of restoration?"—*Dub. Quart. Journ. of Med. Sci.*, August, 1857.

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61. *Puerperal Fever.*—The Academy of Medicine in Paris has for some time been occupied in a discussion on Puerperal Fever, in which the leading obstetricians of the French metropolis have given utterance at length to their opinions. From among the numerous speeches, we translate that of M. CAZEAUX, as it gives a very good digest of the different opinions entertained.

I think that it would be superfluous, after the speeches which you have heard, to revert to the symptomatology and anatomical characters of the disease or diseases collectively described under the names of *puerperal fever* or *puerperal peritonitis*. These points in the discussion appear to me to have been sufficiently studied by M. Depaul and M. Cruveilhier. You are aware of the importance given by the last named speaker to lymphangitis among the alterations peculiar to puerperal fever; so much so, that he considers it characteristic of that disease. But that opinion has been vehemently disputed by M. Béhier, who maintains, on the contrary, that, in autopsies of women who have died of puerperal fever, he has found inflammation of the veins more frequently than of the lymphatics. This assertion of M. Béhier's has surprised me greatly. I have, for my own part, opened a good number of bodies of women who have died of puerperal diseases, and I declare that, like M. Cruveilhier, I have found pus much more frequently in the uterine lymphatics than in the veins. Does not M. Béhier's error depend on an anatomical confusion? For it is remarkable that, although he describes the pus as being in other vessels than M. Cruveilhier does, he still finds it in the same parts of the uterus or its appendages; that is to say, in those portions which are particularly rich in lymphatic vessels. But there is one question which has in an especial degree excited the speakers; it is that of knowing what is the nature of puerperal fever, and what nosological rank it is proper to assign to the lesions which it presents.

In this respect the speakers have been divided into two camps. In the one, they admit the existence of an essential fever—of a pyrexia; in the other, they see only local phlegmasiæ. Up to the present moment M. Beau is the only one who has formally declared himself in favour of this latter doctrine. With regard to the doctrine of essentiality, it has found supporters in M. Depaul, who has the most boldly and the most clearly laid down the question; in M. Danyau, who has also spoken out resolutely enough; in M. Trousseau, who, after having formally rejected the puerperal fever, has so well generalized it subsequently, that he has admitted it not only for women in child-bed, but even for women not in the puerperal state at all, for the fœtus, for the new-born child, and for all subjects attacked by any kind of traumatism. M. Dubois has equally announced himself an essentialist; but he has produced no new arguments in favour of that opinion, and he has enveloped his ideas in such thick clouds, that it is difficult through such a veil to distinguish a pure essentialist. The question, therefore, is solely and entirely between M. Depaul and M. Beau.

M. Beau appears to me to have replied victoriously to M. Depaul, invoking the epidemic and contagious characters of the disease as proofs of its essentiality. I will not revert to these arguments; but I will add that one of the characters of pyrexia, viz., the manifestations of the fever some days before the appearance of the local symptoms, as is the case with typhus and small-pox, is not what is observed in puerperal fever, in which the pain, which is the sign of local phlegmasiæ, shows itself almost at the same time as the shivering, which is the sign of the general pathological state. I find also a very good argument against essentialism in the speech of M. Dubois, who nevertheless makes profession of being an essentialist. Have we not heard that honourable professor tell us that the multiplicity, the variety of the lesions in puerperal fever, would be inconsistent with placing it among pyrexiæ, the principal character of which is to present anatomical alterations, constant and always identical?

With regard to the negative autopsies quoted by M. Depaul as an argument in favour of essentiality, while I admit, as I do willingly, that they have been well made, I can neither consider them as convincing proofs, nor as motives for rejecting the doctrine of local phlegmasias. In fact, do we not see peritoneal inflammations, traumatic, or by perforation, kill so promptly, that material alterations have not had time to be formed? Do we not see, also, burns in the first or second degree cause a rapid death—the effect assuredly, not of the lesion of the tissue, but solely of the extent and violence of the inflammation? On the other hand, is it really necessary to find severe organic lesions to explain functional disorders, and even death, in puerperal fever? I do not think it is; for, in my opinion, the blood in this disease has undergone so profound an alteration as to account for all the accidents, and for the usually fatal termination of the disease.

The mistake committed by those nosologists who have wished to assign a place to puerperal fever consists, in my opinion, in their having studied it under its epidemic form. In order to form a true and clear idea of the disease, we must look at it under its sporadic form; that is, in its condition of simplicity, disengaged from the special elements of gravity necessarily given to it by the epidemic character. Let us then imagine a physician who has never seen a case of puerperal fever, and who has never read a description of this malady. He is brought into the presence of a woman recently confined, in whom a laborious parturition, a prolonged labour, has produced numerous bruises and lacerations, speedily followed by violent shivering, by very severe abdominal pains, and by a series of other severe general and local symptoms which will rapidly terminate in death. At the autopsy, he finds pus in the peritoneum, in the veins and lymphatics of the pelvis. What idea can this physician form of the nature of the disease, but that it is a phlegmasia?

Now, must we admit that there exists a natural difference between the epidemic and the sporadic forms of puerperal fever? By no means—any more than that there exists a difference between epidemic and sporadic pneumonia. Nevertheless, M. Trousseau has brought forward one difference which he describes as very essential; it is the existence of a specific cause, of a kind of virus which would be the essence of the epidemic puerperal fever. Well, a specific cause always produces a corresponding specific disease, announcing itself by signs or lesions always identical; thus, the virus of rabies always produces rabies; the virus of syphilis, syphilis; the smallpox virus, smallpox; while here we have to do with a disease which presents itself with lesions the most varied, sometimes a metritis, sometimes a peritonitis, sometimes a phlebitis, at other times a lymphangitis, a pneumonia, a pleurisy, a suppurating arthritis, etc. We cannot, therefore, allege a sole cause for effects so varied.

The difference which I admit, for my own part, is not where M. Trousseau has placed it—in the nature of the disease; I find it in the very fact of the epidemic, which renders the disease more severe, without changing anything of its essence. It is here with puerpural phlegmasia as with cholera, angina, dysentery, and a hundred other affections that I might name.

Do not think, however, that beyond the local inflammation I see nothing whatever, and that I believe that in that resides the whole gravity of the affection. If, indeed, I do not admit a puerperal *fever*, I do admit a puerperal *state*, which, in preparation throughout the pregnancy, arrives at its maximum of intensity at the time of the accouchement, and shortly afterwards. This puerperal state consists in a notable alteration of the fluids, which is present, in a greater or less degree, in all pregnant women. I have heard M. Trousseau speak to us with some disdain of recent hæmatological researches. For my part, I think they are destined to open to medicine a way of progress, and to enlighten us on many questions which are still obscure. It is not in my place here to recall all the results already obtained; but I cannot be silent on the very special services rendered by hæmatology to obstetric physiology and pathology. Thanks to that science, gentlemen, it is now admitted that pregnancy, so far from constituting a condition of plethora, actually, on the contrary, engenders an anæmic state. Thanks to hæmatology, we now understand the etiological analogies existing between eclampsia and the epileptiform convulsions which terminate Bright's disease. It has been established very clearly that in both cases the nervous phenomena depend on an intoxication of the blood by urea—on an uræmia.

It is also in the blood—in the blood so profoundly modified in pregnancy—that we must seek the first cause and the *point de départ* of puerperal diseases. Thus, diminution of globules, of albumen, of iron, a notable augmentation of water and of fibrine—such are the modifications—I ought to say, the alterations—of the blood in a woman about to lie in. If in such a condition there supervene an extensive inflammation of an important organ, you may conceive what development it must assume in invading an organism so seriously altered. Who can forsee to what extent these alterations of the blood may go, and what may be the consequence of them? For myself, I do not hesitate to say that, in certain cases, they may be carried to a point at which they will produce a transformation of blood-globules into pus-globules; and that without a wound, without phlebitis, without any lesion of the solids.

And on this subject, let me recall a fact reported by M. Andral, and which is very well adapted to impart a certain value to this hypothesis. A man was brought in dying, in a most formidable ataxo-adynamic state; he died at the end of three days. At the autopsy, numerous abscesses were found in the brain, in the lungs, in the spleen, in the kidneys; the blood everywhere was like very loose currant-jelly. In the midst of the blood-globules, which were misshapen, strawberry-like (*framboisés*), a great number of pus-globules were plainly distinguished. Nowhere was there the slightest trace of phlebitis. Collections of pus in many of the solids, and pus in the blood itself, were the only alterations demonstrable.

There is, therefore, in lying-in women, as M. Trousseau has said, a great morbid aptitude, which I will at once call a *pyogenic state*, which not only manifests itself in abdominal phlegmasias, but makes its sad influence felt, whatever be the disease attacking the puerperal female. It is thus that, according to M. Chomel and M. Grisolle, the pneumonias which supervene during the puerperal state acquire an extraordinary degree of virulence, which renders them promptly mortal.

Be the puerperal fever sporadic or epidemic, it always consists essentially in an alteration of the blood and a special aptitude of certain organs to inflame and to rapidly produce pus; with this sole difference, that with epidemics this aptitude finds itself singularly increased by this agent, unknown in its essence, but so manifest in its effect, and to which has been given the vague denomination of epidemic influence (*génie épidémique*); whence also the greater gravity of the disease, and its termination more promptly and more constantly deadly.

I will only say this regarding the contagious character of puerperal fever, that I adhere without reserve to what MM. Depaul and Danyau say about it. After a demonstration so clear, so peremptory, as that furnished by those two speakers, it is impossible that there can remain any incredulous on the point. M. Danyau has therefore, with good reason, insisted on the precautions to be taken to avoid the dangers of contagion.

What shall I say of the treatment? The speakers who have preceded me have superabundantly proved the uselessness of the different methods of cure, and the vanity of certain remedies considered prophylactic.

For the curative treatment, I will confine myself to the declaration that all the means I have tried have failed in my hands, as in those of my colleagues, in cases of virulent or epidemic puerperal fever. I must, however, say that I have obtained good effects from the employment of mercury. I have seen every case get well in which powerful doses of mercury have produced an abundant salivation; a circumstance which induces me to think that he who shall find an infallible means of bringing on a copious salivation will have perhaps discovered a specific for puerperal fever.

As for prophylactic measures, I see none better at present than such as consist in diminishing the agglomeration of women in lying-in; and on that point, I entirely agree with M. Danyau. The measures he proposes appear to me the wisest, the best understood, and the most conformable to the rules of a prudent hygiene.—*British Med. Journ.*, May 15, from *Gaz. Hebdomadaire*, April 16, 1858.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

62. *The Condition of the Lung not Invariably to be Depended on, as a Proof that the Infant has been Born Alive.* By Thos. Williamson, M. D.—In a medicolegal point of view, all fresh cases bearing upon the important subject of infanticide, should be carefully recorded.

During the past eighteen or twenty years of a somewhat extensive midwifery practice, five or six instances have occurred to me, which go far to establish the correctness of the remarks of Dr. Taylor, in his work on Medical Jurisprudence, when referring to the extreme caution and care which ought to be observed by medical men in forming their opinion as to the cause of the infant's death. The mere proof, derivable from the condition of the lung, that the child has respired, is by no means *per se* sufficient to establish the fact that it has been *born alive.* In writing upon this subject, Dr. Taylor says: "Mr. Price has communicated to the *Medical Gazette* the account of a case, in which the cord was so tightly twisted around the neck of a child, that he was compelled to divide it before delivery could be accomplished. There was in this case a deep groove formed on the neck, and it conveyed the impression to himself and a medical friend that, in the absence of any knowledge of the facts, they would have been prepared to say that the child had been wilfully strangled by a rope. In this instance the cord was very short."

In all of my cases, I was under the necessity likewise of dividing the cord previous to the birth of the infant. Had I failed in doing so, life would have been inevitably destroyed; and had a stranger to the history of the cases been called upon to institute a *post-mortem* examination, he must have arrived at the conclusion that these infants had been *born alive.*

Immediately upon the birth of the head, in the instances which have occurred to me, the infant has *respired freely*, but upon running the finger round the neck, one or more loops of the cord have been found firmly encircling the throat. In all similar cases, generally speaking, little or no trouble is experienced in at once disengaging the coil of cord, and thus permitting the almost simultaneous propulsion of the shoulders; but, in the instances referred to, owing to the extreme shortness of the umbilical cord, this manœuvre was found utterly impracticable. Each succeeding contraction of the uterus was found to tighten and constrict the umbilical ligature still more and more; respiration ceased, and the face of the infant became black and congested. Sometimes I have succeeded, with much difficulty, during the interval of pains, in slipping a double ligature around the cord, and severing it at random; at other times, I have been necessitated to divide the cord without any such precautionary measures, dreading alike mischief to the mother and child, and running all the consequent risk of fatal hemorrhage, at least to the infant. I may mention that the umbilical cord rarely exceeded sixteen or eighteen inches in length, and had effected a deep indentation around the neck of the child. In the last of my cases (which occurred within the past few days), shortly after the birth of the infant, upon proceeding to remove the placenta, I discovered that it was firmly retained; the uterus having assumed the hour-glass form of contraction, and refusing to dilate again without the previous administration of a large opiate. Was not this nature herself stepping in to prevent the serious displacement of the *uterus*, the placenta being still undetached from its fundus, whilst the suffocating infant was struggling to get free?

In certain instances of suspected infanticide, which will at once occur to the mind of every one, it must be obvious how very damaging to the accused, is the fact, when brought out by *post-mortem* examination, of respiration having been fairly established. The ordinary inference, where, from the state of the lungs, this process has been proved to have existed, is, that the child must have been born *alive.* Had the cases, however, to which I have referred, been left to themselves, the infants would have been born *dead*, with an indented groove encircling their necks; and yet a *post-mortem* examination would have revealed all the indications usually regarded as conclusive proof that they had been born *alive.* Hence, then, the necessity of great caution in forming an opinion of the cause of death in all such cases.—*Edinburgh Medical Journal*, Feb., 1858.

63. *Death from Chloroform.*—Augustin Prichard, Esq., reported (Feb. 25th, 1858) the following example of this to the Bath and Bristol Branch of the British Medical Association.

"Wm. Howell, aged 49, was admitted as my patient into the Bristol Royal Infirmary, on Tuesday, February 9th, after a consultation recommending the operation of excision of the elbow for long continued disease of the joint. His elbow had been injured two years before, and he had suffered occasionally ever since. He had been under my care once before, and the disease had been arrested by treatment, and he resumed his work. Lately, it had again become worse; and about a month ago, I detected disease of the articular extremities of the bones, with ulceration of the cartilages, and effusion into all the tissues round the joint, with fistulæ leading into its cavity. His forearm was held almost extended in a line with the arm, and he carried it about with his other hand, as patients do when they have ulceration of the cartilages of the elbow. His health had suffered, inasmuch as he was greatly out of condition, from the discharge and constant pain; but he showed no sign of other organic disease.

"The operation was fixed for Friday, February 12th; and at the appointed time, he walked into the operation-room, where all my surgical colleagues were assembled, with the house-surgeon and assistant house-surgeon, and most of the pupils of the Infirmary. I believe one or two visitors were also present; and some of the physicians came in afterwards. He got up without much help and lay down upon the table; and Mr. Powell, the assistant house-surgeon, examined his chest, as he invariably does before administering chloroform, but detected nothing abnormal. The patient had taken no food since his breakfast: this rule is always followed, when possible, to prevent the chance of vomiting, and the danger of solid food impeding respiration by obstructing the glottis when the patient is insensible from the effects of chloroform, and he is always kept in a reclining position. I should mention, in passing, that a boy had just been operated on for phimosis by Mr. Harrison, and the same chloroform and the same sponge that were used in the case of my patient, were used in his.

"A drachm of chloroform (which had been obtained from Duncan and Flockhart, of Edinburgh) was poured upon the centre of a hollow sponge, and held over the patient's nose and mouth. He asked whether he was to breathe it; and was, of course told to do so. I then found that he had still his waistcoat on, and directed him to sit up and take it off, which he did, the sponge being removed for the purpose; and after he lay down, I again made him sit up and remove the shirt-sleeve from the diseased arm, a process that took two or three minutes at least, in consequence of the pain produced by any sudden movements of the limb. He then lay down again, and continued to inhale a portion of the same drachm of chloroform which had been evaporating all this time. I turned round to speak to some of the surgeons of the Infirmary, who were standing near the fire, and in about two minutes my attention was called to the patient, by the assistant house-surgeon saying: "This patient does not bear chloroform well." He was then gasping, but not breathing; his limbs were moving slowly and irregularly in the convulsive motion of death; the eyes were fixed, with dilated pupils; and his pulse had stopped; and he was, in point of fact, dead, as surely as and more rapidly than if he had taken a large dose of prussic acid.

"We tried every available means of restoration. A powerful battery was at hand, and going, and was applied at once. I opened his trachea; and we kept up artificial respiration for half an hour, by blowing into the tube and pressing the abdomen alternately. The battery was applied with sufficient strength to contract forcibly the muscles of the face, neck, and trunk, and to produce the movements of respiration, but without affecting the heart in the slightest degree; and, at the suggestion of some one present, I injected a warm saline solution into the cephalic vein, to try to stimulate the heart; but all our efforts were in vain, for the man was dead.

"The *post-mortem* examination was made the next day. There was considerable *rigor mortis.* The vessels of the scalp were empty. The dura mater was pale, and the sinuses were rather empty. A good deal of clear subarachnoid fluid was effused, more especially posteriorly. The vessels of the pia mater were fluid, containing a good many very minute air-bubbles. The lungs did not collapse when the chest was opened, and they were slightly emphysematous at the edges, more particularly on the right side. The right side of the heart contained dark frothy blood; the left side was empty. The organ weighed a little more than eleven ounces. Its external surface was much covered with fat, especially in the right side; and the muscular structure generally was pale, and contained much fat, which showed itself, under the microscope, disposed in rows among the fibrillæ. There was also some atheromatous thickening of the mitral valve. The organ was not hypertrophied. There was a good deal of coagulated and fluid blood in the abdomen, effused from some of the vessels of the omentum. The liver, kidneys, and other organs, were quite healthy.

"*Remarks.*—I need hardly to say, that to witness a scene of the kind which I have described impresses most forcibly upon us the grave responsibility we incur when we use chloroform for any but the most severe operations, and makes us realize the dangers which we have up to this period escaped. In the present instance, the patient was about to undergo a very painful, and possibly tedious operation; and his disease was of that nature that, if unrelieved by treatment, it would have worn down his strength, and destroyed his life; and therefore in this case, if ever, chloroform was justifiable. I can imagine no case where, when danger presented itself, aid was more immediately at hand; viz., plenty of surgical help of the best kind, and experienced assistants, used to deal with great and sudden professional emergencies; a powerful galvanic battery, and instruments of all kinds, on the table within reach; and the assistant house-surgeon, who administered the chloroform for me, was accustomed almost daily to use it, and had his hands on the patient's pulse; and yet he died in two or three minutes from the time when the exhibition of the chloroform was begun, and probably before he had inhaled *one-fourth of a drachm*, in spite of all our precautions, and all our anxious endeavours to keep him alive.

"The *post-mortem* examination, moreover, was of no help whatever in explaining the cause of this sudden death. With the exception of the fat in and upon the heart, there was no abnormal appearance of any kind; and the fatty degeneration, although tolerably well marked, was not sufficient to produce any sign or symptom during life by which we might have been able to guess that there was even the slightest deviation from healthy structure. There was no sign of arcus senilis in the cornea. The man was a quiet, steady, sober workman, and seemed in good spirits before he began to inhale the chloroform; and thus, as far as I can see, from this most unfortunate case we get little or no assistance or hint for guidance, or additional experience of practical value for the future.

"In conclusion, I may perhaps be allowed to record my present opinion respecting chloroform, and to repeat what I said when I had the honour of reading the annual address before the members of the Branch last summer. I then said, and still think, that 'if we are in the constant habit of using any agent which destroys life once in the course of some thousand cases, it is a very grave matter,' and that 'we are not justified in using it in all trivial operations;' and that 'no agent which can so control the nervous system as to make it insensible to every kind of stimulus can be considered as devoid of danger.' I believe that to some constitutions chloroform acts as a poison, and that at present we have no means of knowing what are their peculiarities. The drug acts upon the heart in these cases (and I believe in all others where it acts prejudicially), and we should therefore avoid its use when there are symptoms of diseased heart or brain. It should never be administered when the stomach is full; and it should be given, as has been recommended by others, diluted with alcohol or ether, and, of the two, the former is to be preferred. The horizontal position should always be maintained; and I believe that the danger would be lessened were the patient to take, immediately before the inhalation of the chloroform, a glass of wine or brandy and water, or some other effective stimulus."—*British Medical Journal,* March 13, 1858.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

The Local Application of Belladonna as a Means of Arresting the Secretion of Milk. By Geo. McC. Miller, M. D., of Brandywine Village, Del.

Having seen in the medical journals at different times accounts of the successful use of belladonna as a local application for the arrestation of the lacteal secretion, I was induced to make a trial of it in the following case, and, as will be perceived, with entire success.

S. T., coloured, æt. about 25, was delivered of her third child on the 19th of last February. Her labour was natural, short, and easy. The child, which was premature, being about the eighth month, was also dead, and evidently had been so for some time. The cause of the death of the fœtus was inexplicable, as the mother had been quite well during her pregnancy, and had met with no accident or injury. About a day after her delivery, I commenced the local application of a solution of the ext. belladonna, in the proportion of gr. x to the f℥ss of water. I directed the solution to be applied with a camel's hair pencil, to the areola of each mamma, and for a short distance beyond it, three times a day. The patient, a woman of intelligence, followed my directions faithfully.

On the third day the breasts swelled moderately, and became somewhat painful and tender, and a little milk oozed from the nipples. But under the use of the belladonna the secretion disappeared, and in less than a week the solution was discontinued, the mammæ having reacquired their normal size and aspect. The patient was not troubled with any further unpleasant symptoms, had a good getting up, and soon resumed her ordinary duties.

I shall make no comment on the above case further than to remark that if belladonna be found to possess indubitably the property claimed for it of arresting the secretion of milk, it will be an invaluable addition to the resources of the physician, and will, under special circumstances, save a great amount of inconvenience, and even suffering, to his parturient patients.

Ranula successfully treated by a Lead Ligature. By John ~~J~~. Pee~~l~~e, S./t M. D., of Tipton City, Tennessee.

In the month of June, 1855, I was consulted by a lady of my neighbourhood (Mrs. F. A. T.), aged about thirty years, as to whether there was a probability of performing any operation which would effect a permanent cure of a "Ranula," with which she was afflicted then, and had been for some eight or ten years. Mrs. ——— informed me that the tumour had been twice opened, and a portion of the sac taken out with the view of effecting a cure, but with only temporary relief.

The case was one of more than ordinary interest to me, from the fact of the subject being a personal friend. Consequently, I examined all the surgical works at my command at the time, and concluded to treat the case differently from the plan laid down by any author examined, and so far as I know, by a new method. 'Tis true that some have recommended the lead probe to be inserted in the orifices of the "sub-lingual" ducts, but in this particular case, this plan could not have answered, inasmuch as the orifices of the ducts seemed to be entirely obliterated, caused, I suppose, by inflammation after the previous operations.

On the 27th of July, the same year (1855), at my request, Mrs. —— came to my house to submit to the operation which was recommended by me. At that time the tumour was of the size of a large hen's egg, and interfered very much with articulation. I made a free incision into the tumour, and with a "scoop" removed all the contents of the sac, which was filled with a thick granular, cheese-like matter. In three days after evacuating the contents of the sac, I passed a large sized surgical needle, armed with a ligature, to which was attached a roll or cylinder of lead, about ($\frac{1}{12}$) one-twelfth of an inch in diameter, and two inches in length, from right to left, entirely through the sac. The roll of lead was drawn through the "punctures" made with the needle, by the ligature which was attached. I then brought the two ends together forming a ring, which was allowed to remain (and with no other unpleasant effects than to remind the patient of the constant presence of some foreign body beneath the tongue). At the end of two weeks, on examination, I found that a perfect union of the parts was accomplished, and no inflammation being present, the lead was withdrawn, first straightening out the ring with a pair of small forceps and a probe. Soon after the removal of the lead ring, there was discharged about f℥ss of saliva, which had accumulated in the sac since the lead ring was introduced. Up to this date, 16th April, 1858—now nearly three years since the operation—the patient remains entirely free from any further accumulation in the sac.

I am of opinion that all cases of ranula may be permanently cured in the incipient stage by the simple operation of inserting the lead ring, and allowing it to remain ten or twelve days. The ring, in my judgment, possesses great advantages over the probe, from the fact that the latter would be very easily dislodged, while the ring could not be displaced until desired.

Case of Poisoning by Camphor. By T. M. Woodson, M. D.

March 27, 1858. A negro girl, aged ten years, clandestinely obtained a bottle containing tinct. camphor; prompted by idle curiosity or taste, she was induced to drink a portion. The first thing noticed was—the wildest delirium—running up stairs—falling headlong to the bottom, &c. This alarmed the family, who, not knowing the cause, I was sent for, and arrived about two hours after the first appearance of delirium, at 11 o'clock A. M. I found her in the wildest fury; screaming at top of her voice; running violently against any object that was about; required two stout persons to confine her to prevent injury of her person; talking constantly and incoherently; not knowing those about her; extremities were cold; head hot; pupils contracted; pulse very feeble and small, beating 84. At the beginning she complained of violent pain in the head; had vomited a short time before I saw her, when the family detected the odour of camphor in the contents thrown up; this led to a strict inquiry, when it was ascertained through a little negro that he saw her drinking of the tinct. camphor. This explaining the matter, I immediately administered copious draughts of warm water with ipecac and antimony, which speedily induced free emesis. Poured cold water on the head—this quieted the raving delirium almost instantly; but she then fell into profound coma from which she could not be aroused; pulse fell down to 60, full; slow stertorous respiration; dilated pupils; extremities warmed up; there was slight tetanic rigidity of the jaws; eyes drawn forcibly inwards. Three hours afterward, at 2 o'clock P. M., pulse 72, good volume; still comatose; cold water again to the head. At 3 o'clock P. M. she awoke, with irritable stomach, having been four hours in deep stupor, and two in *delirium.* For several days her gait was staggering, but otherwise she did well. On being questioned, she admitted having drank the tinct. camphor, two drams of it as she expressed it. Now how much we are left to conjecture, but is it not reasonable to suppose she drank from 3 to 6 or more fluidrachms. Tinct. camphor contains about 7½ grains to the drachm, making from 23½ to 45 grs. camphor, or even more, the dose being from 1 to 20 grs.; for its full effect as a cerebral stimulant, or indirect sedative, being 5 to 20 grs., the latter quantity to an adult when a powerful effect is required in neuralgic or spasmodic affections. It is stated upon the authority of Prof. G. B. Wood, that no fatal case is on record from poisoning with it, except the case of an infant aged 18 months, from a dose of 10 grs. In the above case it certainly produced alarming symptoms. There were no general convulsions, only the partial spasmodic disorder of the muscles of the eyes and jaws. But the functions of sight and hearing were greatly obtunded, as shown by her heedlessly running against things, not answering questions, &c.

HANNA'S P. O., SUMMER CO., TENN., *April* 10, 1858.

Death from a Gallstone arrested at the Lower Part of the Small Intestine. By D. LEASURE, M. D., of New Castle, Penn.

On the third day of April, I was called, in consultation with my friend Dr. J. H. M. Peebles, to J. H., aged 52, boss puddler in the Cosalo Iron Works, of this place.

Four days previously, he had been attacked with violent colic, which had yielded to the usual remedies so far as to give but little pain or uneasiness, except that the bowels were obstinately constipated, and all aperient medicines are rejected from the stomach. Every resource that our ingenuity could invent was adopted, but in vain. The vomiting would recur at irregular intervals, and the character of the matter ejected was, in addition to the food or fluids swallowed, apparently the contents of the ileum. Never, at any time, was there any appearance of the contents of the colon in the ejecta, nor was there any fecal odor attending them at any time. A gallon and a half of warm water was thrown by a syringe into the rectum and colon, but its discharge was not accompanied by any unusual appearance. The patient was a large, fat man, weighing, when in health, some two hundred and odd pounds. For some two years, he had complained of uneasiness, and occasional pains, which he referred to the stomach, but otherwise his health did not seem, to any serious degree, affected. Some days previous to his last attack, he had assisted in laying some very large and heavy flagstones in his back yard, and as he had been unemployed for some months (the iron works having suspended operations), it was alleged that there might be some mechanical obstruction in the alimentary canal, the result of his unaccustomed labour. The treatment usual in such cases was adopted, but the only thing that afforded any temporary relief was opium and calomel, in large portions. These seemed to allay irritation, relieve the violent vomiting, and obviate the frequent inflammatory threatenings, better than anything else. There did not seem to be any violent inflammation at any time, and on the 8th of April, nine or ten days after the accession of the attack, he died.

An opportunity was afforded for a post-mortem examination (a thing, by the way, never denied us here), and in the presence of, and assisted by, Drs.

Peebles and Cossit, I made an examination. Everything in the abdominal cavity presented a healthy appearance until we came to a portion of the ileum, about ten inches above its entrance into the blind head of the colon. Here were some slight traces of inflammation at that point, and the bowel seemed slightly contracted upon an oblong, hard substance, which could, with a good deal of force, be dislodged, and thrust backwards and forwards in the intestine. On opening the gut, the hard substance proved to be a gallstone, one inch and a half in its longer, and one inch and an eighth in its shorter diameter. It was not smooth or polished on its surface, but about as smooth, and, indeed, not much unlike, an Aleppo gall. There were numerous recently formed bands on the interior surface of the bowel around the stone, and the bowel was plainly a little contracted at that point, and slightly thickened. The force used in pushing the stone from its position was certainly far greater than any force inherent in the bowel itself, aided by any amount of increased peristaltic action. Below this point, the bowel was clear of any obstruction, and healthy. We now naturally turned our attention to the liver and gall-bladder. The liver exhibited no signs of disease, but the gall-bladder presented unmistakable evidences of having been subjected to some strong disturbing force, which must have acted long and persistently. The gall-bladder itself had lost its distinctive form altogether, and appeared as though it had descended into its own ducts, while the ducts themselves had lost their characteristic forms and position, all being blended into one, and that one as large as the intestine itself. The duodenum was firmly adherent to the liver for a distance of two inches on each side of the mouth of the choledic duct, and the choledic duct was enlarged to the size of the gallstone found below, and greatly thickened. Indeed, the ducts blended into one, together with the gall-bladder itself, appeared to be simply a short inverted sac, inserted into the substance of the liver. Evidently the gall-bladder had contracted upon the stone from some cause, and the stone retreated, either from its own gravity, or *a vis a tergo*, or both together, gradually dilating the common duct to a diameter sufficient to allow it to drop into the duodenum, and all this had taken place so slowly that no pathognomonic sign gave token of the mischief going on. It seems probable enough that the patient's violent lifting at the flagstones may have dislodged the gallstone into the bowel, and that the colicky symptoms were the result of its passage through the small intestine, slowly and with difficulty, until, after traversing almost its whole length, it was stopped a few inches from the colon, which, if it had reached, the patient might have been safe. No other calculi were found.

DOMESTIC SUMMARY.

Reduction of Dislocations of the Femur by Manipulation.—Dr. F. Hamilton concludes an interesting practical paper (*Buffalo Medical Journal*, June, 1858) on this subject, with the following *résumé* of his researches:—

"Richard Wiseman, so early as the year 1676, recommended, in case of children, where the thigh was luxated upon the dorsum ilii, to adduct the limb, then flex it upon the belly, and thus reduce the bone.

"Richard Boulton, in 1713, and Daniel Turner, in 1742, have repeated the same advice. The latter recommended also the application of a similar plan, *in all cases*, before resorting to the pulleys; he has, moreover, reported one case at length, in which he succeeded by manual extension and manipulation, but without the aid of mechanical appliances; and he declared that he had reduced two others by the same method.

"Heister, in 1768, thought also of reducing these dislocations by manipulation alone.

"Sept., 1776, Thomas Anderson, of Leith, reported, in the *Edinburgh Med. Commentaries*, two cases which he had reduced by manipulation, one being a dislocation upon the dorsum ilii, and one upon the foramen ovale.

"Klug, in 1823; Wattman, in 1826; Rust, in 1828; Columbat, in 1830; Fishcher and Mahr, in 1849, published descriptions of their several modes of procedure, all of which were by manipulation, and most of which were essentially or precisely like that which is now generally practised.

"Our researches have also brought to light the following facts, illustrative of the connection of American surgeons with this procedure.

"Dr. Philip Syng Physick accidentally reduced a dislocation of the hip by manipulation, in 1811.

"Dr. Nathan Shumway, of Essex Co., N. Y., Dr. Luke Howe, of Boston, and many others, affirm that Dr. Nathan Smith, of New Haven, taught and demonstrated upon the skeleton this mode of reduction of dislocated hips, in his lectures at Yale College, as early as 1816.

"In 1824, Dr. Smith, in a written deposition, declared that he had once reduced a dislocation upon the dorsum ilii by carrying the knee towards the patient's face, and without pulleys.

"In the year 1831, Dr. Nathan R. Smith, of Baltimore, published a full account of the views and practice of his father, Nathan Smith, in an octavo volume. His description of his mode of reducing dislocated hips, and his explanation of the theory of the process is clear and elaborate, occupying twenty pages or more. The whole is illustrated by wood-cuts.

"In May, 1840, Dr. Luke Howe called attention again to Dr. Smith's mode, in the *Boston Medical Journal*, and reported a case reduced by himself.

"In the English edition of Sir Astley Cooper on Dislocations and Fractures, edited by Bransby Cooper, and issued in 1842, is an account of a compound dislocation of the hip, reduced by manipulation. The same is seen also in the American edition of the same book, published in 1852.

"On the 8th of May, 1850, W. W. Reid, of Rochester, N. Y., read before the Monroe Co. Med. Society a paper entitled 'Dislocation of the Femur on the Dorsum Ilii, reducible without pulleys, or any other mechanical power,' which paper, containing the details of three cases in which he had accomplished reduction by manipulation, was published in this journal for August, 1851.

"If my readers have followed carefully the descriptions which I have given of the modes of manipulation adopted by the various surgeons during the last two hundred years, they have seen a remarkable similarity in their procedures, especially when they have been speaking of dislocations upon the dorsum ilii, and such as to induce a belief that the modes were nearly or quite identical; and yet they must have noticed, also, constantly such slight differences in the descriptions, or in the terms employed, as to render it apparent that only in very few instances had the writers copied their opinions and practice from their predecessors. In most cases, the writer appears to have been ignorant of what had been done before, and, indeed, he has generally avowed a belief that his method was new and altogether original.

"This fact may not be difficult of explanation, when we call to mind the unfrequency of dislocations of the hip, and that fifty years ago the number of surgical books, and especially of medical journals, was very much less than at present, so that great and valuable truths often died with their discoverers, or were known and remembered only by a few. But it is possible that it has a deeper significance, and that it implies some defect in the procedure, or serious danger, in consequence of which it has, from time to time, lapsed into disuetude, and finally complete oblivion.

"It is for the purpose of aiding in the elucidation of this question, and that we might, if possible, determine what accidents or injuries are likely to accompany the reduction of dislocations of the hip by manipulation, that I have had these tables constructed, and with the following results:—

"The total number of cases is 64. Of 35 cases, in which the age is stated, the average is 24 years, the youngest being two years and one month, and the oldest 52 years. Of 51 cases stated, 45 were males, and 6 females. Of 57 cases stated, 30 were dislocated upon the dorsum ilii, 14 into the ischiatic notch, 10 upon the foramen ovale, and 3 upon the pubes. Of 53 cases stated, 37 had occurred within 24 hours of the time at which the reduction by manipulation was attempted; 4 within ten days; 4 within three weeks; 1 at four weeks; 1 at five weeks; 1 at six weeks; 1 at seven weeks; 1 at twelve weeks; 2 at twenty-four weeks, and 1 at thirty weeks.

"In 50 cases stated, pulleys had been previously tried. and had failed in 8; Jarvis's adjuster in 1; Jarvis's adjuster and manipulation in 1; other modes of extension in 6. In 34 cases, no means whatever had been previously employed.

"Of 52 cases stated, ether was employed to diminish the resistance of the muscles, and to aid in the reduction by manipulation, in 16; chloroform in 13; chloroform and ether in 2; venesection in 3, with or without opium and antimony; morphine alone in 1; and no means whatever in 17 cases.

"Of 41 cases stated, 28 were reduced in the first attempt, 7 in the second, 4 in the third, and 2 in the seventh.

"In 7 examples, the head of the femur has been thrown from one position to another upon the ilium, travelling from the dorsum to the foramen ovale and back, or from the ischiatic notch to the foramen ovale, or from the dorsum to the ischiatic notch, &c., in some instances these changes being made as often as seven times in succession. In two of these examples, the limb has been finally reduced by pulleys, and in one instance, an abscess, with morbus coxarius has ensued. In no other case has any permanent injury been known to follow these changes of position of the head of the bone.

"In 1 case, the thigh was broken, during manipulation, through its lower third.

"20 cases are known to have got well speedily, or within a few weeks after the reduction of the bone. 1, the case of compound dislocation, died in three weeks.

"Of six failures, two are known to have been recent cases, and three to have been ancient; but in only two of the six is a positive triumph of the pulleys over manipulation established: one a recent case, and one an ancient case; while, on the other hand, eight were reduced by manipulation, after pulleys had failed, two after Jarvis's adjuster had failed, three after manual extension had been tried, and three after extension, the precise character of which is not stated. In all, sixteen triumphs of manipulation over extension.

"It will be noticed that the great majority of the cases from which this analysis has been made occurred in private practice, and it is unnecessary to say that such statistics do not furnish the most reliable basis for conclusions. As a general rule, unsuccessful cases are not published by private practitioners, but successful cases are pretty certain to be made known; while, on the other hand, a series of cases furnished by any single hospital will generally be found to have given both unsuccessful and successful cases. The writer has heard lately of a complete failure to reduce by manipulation in a recent luxation of the hip, after repeated efforts on several successive days, and where skilful surgeons were in attendance; but it is believed that no account of the result has been published.

"At least four of the unsuccessful examples recorded were hospital cases, and were all found in the report of 15 cases reported by Markoe and Van Buren, from the New York Hospital. This is a startling fact, especially when we consider the skill of the several gentlemen who were the operators in these cases; and it plainly renders a new series of statistics necessary, drawn solely from the experience of one or more similar large establishments, before we shall be prepared to decide positively upon the relative value of the two procedures.

"*Note.*—Indeed, the writer is in doubt whether he ought to regard cases 61 and 62 as examples of failure to reduce by manipulation, since, in the first case, the reduction was finally accomplished by manipulation, *aided* only by manual extension, while, in the second case (62), we are only informed that the femur was broken by manipulation; but we do not positively know that it was not reduced. If we are permitted to reject these two, then we have no reported cases of failure but the four New York Hospital cases, which occurred in a total of fifteen, and stand in the ratio of more than one failure in every four cases."

Empyema of the Left Pleural Cavity treated by Injection of Iodine.—Prof. Daniel Brainard reports (*N. W. Med. and Surg. Journ.* Nov. 1857), the following case:—

T. S. B., aged 16, a native of Norway, first came under the care of Prof. Brainard, April 15, 1857, with empyema of the left pleural cavity, the result of a wound.

The previous history of the case, as given by his friends, is as follows: Some five months since, the patient received a stab in the left side, between the fifth and sixth ribs, just below the nipple, with a sharp-pointed knife, which was followed by difficulty of breathing, spitting up of blood, etc. The external wound was closed with sutures and adhesive plaster, the patient was bled, purged and confined to a low diet. At the end of three weeks the wound had healed, and the patient was able to be about, but the difficulty of breathing had not entirely subsided, and he suffered more or less pain in that side.

He remained in this state for the space of two months, when a pretty copious discharge of matter took place from the wound, which had opened by ulceration. Since which time there has been a constant discharge of extremely fetid pus from the wound, and the patient was gradually becoming weaker and emaciated. The parents of the patient being in destitute circumstances, nothing was done for him during this time.

Present Condition.—The patient is now excessively thin; the skin presents a shrivelled and yellow appearance. There is a distinct bulging of the affected side, and one teacupful of fetid pus is discharged each day from the wound. The shoulder of the affected side is two inches lower than the other. He walks with the utmost caution, as the least jar or misstep gives him great pain; in fact, he is scarcely able to walk from one room to another without assistance. He is also affected with loss of appetite, chills, night-sweats and diarrhœa.

Treatment.—The opening was sufficiently enlarged to admit a gum-elastic tube of four inches in length, of the size of a No. 9 catheter, through which the pleural sac was washed out morning and evening with the following solution:—

℞.—Iodinium, gr. j; Potassi iodidum, grs. iij; Aqua destillata, ℥j. M. Ft. sol.

The solution was thrown in with a strong syringe, and allowed to flow out again after remaining in for a few moments. If any smarting followed the operation, the cavity was washed out with cold water. The first effect of the iodine was to change the character of the discharge to nearly healthy pus, and afterwards to lessen the amount of suppuration. No bad symptoms at any time followed the use of the injection. Iodine could be detected in the urine. The patient was, in the mean time, placed upon as generous a diet as he could take, with the use of stimulants.

As he had a very intelligent friend to take charge of him, he was allowed to go into the country to his own home, and continue this course of treatment there, after having remained under observation for two weeks.

July 10. The patient returned to the office this morning from the country. It was surprising to see the improvement that had taken place; he has gained in strength and flesh quite rapidly. Suppuration is still going on, but not much, and the discharge is of a healthy character. The injections had been faithfully used while in the country. He was advised to pursue the same plan, and again returned to his home.

October 10. The patient again presented himself at the office, from the country. The suppuration had entirely ceased, and the external wound had healed soundly. Instead of the mere skeleton he was seven months ago, he now presents the appearance of a sound, healthy boy.

I made a physical examination of his chest this morning, and could detect no difference in the two sides.

Constitutional Effects produced by Substances introduced into the Urethra.—Dr. J. L. Crawcour states (*New Orleans Med. News and Hosp. Gaz.*, May, 1858), that when bougies, tipped with an ointment containing morphia, are introduced into the urethra, rapid and intense narcotism is produced, and this result is out of all proportion to the quantity of sedative employed.

He has also seen the peculiar effects of belladonna produced by passing a bougie into the urethra anointed with a minute portion of atropia ointment.

Piece of Tin in the Windpipe. Laryngo-tracheotomy.—Dr. Paul F. Eve records (*Nashville Journ. Med. and Surg.*, Sept., 1857) the case of a negro boy, three years of age, which strongly illustrates the occasional great power of endurance of the human system. The patient two days before being taken to Dr. E., "while attempting to whistle with a small strip of tin in his mouth, fell backwards out of a piazza and inhaled it into his windpipe. This was followed by instant and persistent embarrassment to respiration, loud rhonchus, loss of voice, or rather its reduction to a whisper, and some slight hemorrhage. The family physician not having relieved the patient by an emetic, inversion of the body, etc.," directed the boy to be taken to Nashville. Being satisfied from the symptoms that there was a foreign body in the windpipe, Dr. E. decided to operate. Accordingly, on the 13th June, four days after the accident, Dr. E. opened the larynx, and then the trachea, and made "diligent search" for the foreign substance. "The larynx was twice wiped out by sponges carried through the wound and brought out of the mouth, and the trachea and bronchi carefully and cautiously explored with probes and long forceps, but nothing special detected. There was an unusual amount of hemorrhage in the division of the soft parts, and ligatures were applied to each side of the isthmus of the thyroid body before its section. Dr. Bowling administered the anæsthetic agent (equal portions of ether and chloroform), while Drs. Jennings, Briggs, Wharton and others aided during the operation, which to any one who has never opened the windpipe of a fat child three years old, it would be unnecessary to say, was a tedious and embarrassing one.

"So extensive in the air passages was the effusion of mucus, that none of us could determine the exact position or site of the foreign body.

"Counting the time consumed in arresting the hemorrhage, using the anæsthetic means with extra precaution, waiting for patient to recover and be revived by drinking water, etc., he was nearly two hours upon the operating table."

The opening of the larynx was kept patent, and patient put upon an antiphlogistic course.

The second morning, during a paroxysm of cough, a piece of tin, measuring seven-tenths of an inch in length, and three-twentieths in width, with sharp angles and edges, was ejected through the wound. It was smooth and polished upon its two surfaces, discolored, however, now by bloody mucus. Treatment, antiphlogistic, continued.

In a day or two the patient began to improve, and on the tenth day left for home.

Impregnation without Rupture of Hymen; great Sensibility of Parts.—Dr. Howard Smith records (*New Orleans Med. News*, June, 1858) the following interesting example of this:—

Dr. S. was requested by a gentleman to attend his wife in her confinement, and stated that, owing to some obstruction in the vagina, he had never been able to penetrate more than half an inch, and that at the consummation of his marriage he had been satisfied the hymen had been ruptured.

Dr. S. called upon the lady, and learned that she had never suffered from any inflammation of the parts, even when a child, that she had menstruated regularly until after her marriage, and that her health had been uniformly good.

She submitted to an examination, but the moment Dr. S.'s finger came in contact with the inner surface of the labia majora she showed such symptoms of real suffering that he desisted at once. Some washes of cold water, and borax, etc., were used, but without the least effect in diminishing the sensibility of the parts.

"Her husband then proposed that an ocular examination should be made, as he was sure that the obstruction could be seen. I made it, and, on separating the labia, I noticed, lying at the posterior part of the vagina, and some distance in, a fleshy *looking* mass, which nearly filled the orifice, but it was impossible to touch it.

"At first I had thought that the fear of the touch was affectation, but when, in the second examination, I had tried to pass a female catheter into that part of the vagina where there was no obstruction apparent, the pain occasioned by it was such as nearly to make her faint; and she exhibited, throughout the different attempts which were made to explore the parts, so much determination to control her feelings, that I soon became satisfied there really was as much pain as she said there was.

"I next determined to use chloroform. Here another difficulty arose, for she assured me that when she had taken chloroform for the extraction of a tooth, though she was under the influence of it, she had felt the pain distinctly. At the first trial I made, she came very readily under the influence of the anæsthetic; but the least attempt to pass the finger aroused her at once, and rendered her so nervous that I feared an attack of hysteria. The second attempt succeeded no better. But these two trials satisfied me that she could bear the use of chloroform without any danger. The third time I brought her rapidly and fully under the influence of the anæsthetic, and, whilst she was breathing with stertor, I passed my finger into the vagina, and up as far as I wished, and was convinced that the only obstruction which existed was an unusually dense hymen.

"Although so completely insensible that she had no recollection, when she awoke, of what had passed, still she tried to move away from my finger, and her countenance expressed pain.

"Though relieved from apprehension of any serious mechanical obstruction, I could not but be anxious about the expected confinement; for if this extreme sensibility of the vagina continued, it would be impossible for me to make an examination during the progress of the labour, and I could not rectify a malposition, or even know whether the uterus was dilating or not. My only hope was that the severity of the labour pains would mask the pain caused by the examination. In that hope I was not disappointed.

"Her labour came on naturally but slowly, as was to be expected in a first accouchement. The parts were distensible, and lubricated by a copious secretion. I was called at nine o'clock in the evening, and remained with her during the night, the pains all that time being of that kind which characterizes the first stage of labour. About half-past eight in the morning the expulsive pains came on, but not very intensely. In attempting to make an examination in the interval between the pains, I found the same sensibility, and was forced to wait until the next contraction of the uterus, when I introduced my finger and made out the presentation to be of the vertex, and in the first position. In withdrawing the finger, I could now distinctly feel the sharp crescentic edge of the hymen, which was hard and dense. The perineum was supported most carefully, and frequent examinations made to note the progress of the child's head. The pain which delivered the head was very severe, and I distinctly felt the hymen rupture as the head escaped into the world. The rest of her labour presented nothing of importance. She recovered without a bad symptom, without fever, and with no tearing either of perineum or walls of the vagina."

Cystic Tumours on the Nates, obstructing Delivery.—Dr. Keller exhibited to the Pathological Society of Philadelphia (Nov. 25, 1857) two remarkable specimens of cysts taken from the nates of children, and which had presented a great obstacle to their delivery. The following histories of them were reported:—

Case I.—Mrs. R., about twenty-five years old, had previously been delivered of two full-grown, healthy children. She was at the time in very good health, and the prospects for a third easy delivery were very favourable, the child being found with the vertex presenting. After a few pains the head was born, and the trunk of the child followed easily up to the hips; here it stopped; and when the attending physician tried to extract it in the usual way, he found an obstacle which he could not overcome even by exerting all his force. Having called in some experienced colleagues, the blunthook was used, by which the child was soon delivered, alive, but unfortunately with the left thigh broken by the application of this dangerous instrument. Owing to this accident, and to a deformity on the back, the physicians declared the child could not live. Three days after the delivery of the woman (on the 6th of December, 1855), I was called to see the child in consultation, the mother being sick and the child in a desperate state, as the fractured leg had begun to mortify. When I examined the child, I found a tumour, of the size of a man's head, attached to the nates, exactly behind the orificium ani, and containing a liquid. On the right side, at the base of the tumour, could be felt, by a careful examination and strong pressure through the liquid, another hard tumour, in form and size like an egg. The child, not being expected to survive, had not received any nourishment excepting a little tea and water. In order to settle the question whether the child could live or not, it was proposed, on the eighth day, to empty the sac by a puncture. More than a quart of a brownish liquid escaped, which became of a bloody colour as it continued to flow. The child died a few hours afterwards, from a hemorrhage into the sac. A *post-mortem* examination was performed the next day. The viscera were all found in a perfectly healthy state, and did not communicate with the tumour. The sac was shrivelled into folds, and contained a large clot of blood. It was a perfect cyst, the parietes of which were very dense, covered in some parts, particularly at its insertion into the nates, with soft conglomerations of bloodvessels. The smaller, hard tumour above mentioned, which was felt inside of the sac, was formed by cysts, having dense but transparent membranes, and containing a clear liquid. At no point did the cyst communicate with the spinal column.

Case II.—On the 21st of March, 1856, at 2 o'clock A. M., I was called to attend Mrs. T. in labour. I found the patient in a strange situation, as the child, having presented in a position of the vertex, had made its full exit, but could not be separated from the mother, being attached by a pedicle to a large body remaining in the womb, which was supposed to be another child. Before examining, I suspected a cystic tumour, and in this opinion was fully confirmed by a close examination. I immediately punctured the tumour with a curved trocar, and after the evacuation of about a gallon of a brownish liquid the sac was emptied, and the child naturally expelled. It died about six hours after its delivery, by a capillary hemorrhage into the sac. The liquid unfortunately could not be examined chemically, as it was thrown away in spite of my strict injunction. The sac showed externally the natural appearance of the skin; the walls were about one-sixth of an inch thick. The internal surface was covered on the upper part with a soft tissue, which showed under the microscope a rich network of capillary bloodvessels, very similar to the villi of the intestines. The lower part was covered with a reticulated fibrous tissue. The tumour was inserted between the orifice of the rectum and the point of the coccyx, as in the first case; not exactly in the centre, but about two inches to the right side. A careful examination proved that the tumour did not communicate with the vertebral canal.—*N. A. Med.-Chirurg. Rev.*, March, 1858.

GRADUATES OF THE UNIVERSITY OF PENNSYLVANIA, 1858.

At a Public Commencement, held March 27, 1858, in the Musical Fund Hall, the Degree of Doctor of Medicine was conferred by Henry Vethake, LL.D., Provost, upon the following gentlemen; after which an Address was delivered by Joseph Leidy, M. D., Professor of Anatomy.

NAME.	POST-OFFICE.	COUNTY.	STATE.	SUBJECT OF THESIS.
Akin, James T.	Columbia,	Maury,	Tenn.	Scarlatina.
Armstrong, Jas. G.	Wilson,	Wilson,	N. C.	Therapeutical application of Oleum Terebinthinæ.
Baird, John L.	Murfreesboro',	Rutherford,	Tenn.	Acute Meningitis.
Barber, Gideon M.	Rushville,	Rush,	Ind.	Arteritis.
Baugh, Virginius N.	Stony Creek,	Sussex,	Va.	Variola.
Beall, Thos. T.	Church Hill,	Jefferson,	Miss.	The Physician's Calling.
Beldon, Oliver S.	Salem,	Salem,	N. J.	Chemistry in Treatment for Metallic Poison.
Bethell, Chas. P.	Philadelphia,		Pa.	Hygienic Management of Children.
Boileau, Nathaniel B.	Easton,	Northampton,	Pa.	Cholera Infantum.
Boisnot, James M.	Six Mile Run,	Somerset,	N. J.	The Physiology of Woman.
Bolton, Edw. C.	N. Orleans,	Par. of Orleans,	La.	Yellow Fever in Norfolk.
Booth, John W.	Fairport,	Granville,	N. C.	Mammary Inflammation.
Boynton, Gaines M.	Albany	Dougherty,	Ga.	Hæmostatics.
Bullock, Wm. J.	Wilson,	Wilson,	N. C.	Hernia.
Cadwallader, D. Willis	Yardleyville,	Bucks,	Pa.	Regimen.
Carpenter, Thos. P.	Criglersville,	Madison,	Va.	Cholera Morbus.
Christy, Henry C.	Fair View,	Cambria,	Pa.	Indigestion.
Clark, Edwin P.	Orange C. H.	Orange,	Va.	Typhoid Fever.
Clemens, Jas. W.	Wheeling,	Ohio,	Va.	The Minute Structure of Bone.
Curtis, Geo. B.	Honesdale,	Wayne,	Pa.	Psoas Abscess.
Daniel, Benj. W.	Americus,	Sumter,	Ga.	Conception.
Darby, J. Thomson	Fort Motte,	St. Matthew's,	S. C.	The Anatomy, Physiology, and Pathology of the Supra Renal Capsules.
Dearing, Asa W., jr.	Flint Hill,	Rappahannock,	Va.	Characteristic Signs of Fever.
Deloatch, Henry W.	Margaretsville,	Northampton,	N. C.	Dysentery.
Doss, Henry W.	Pickensville,	Pickens,	Ala.	Venesection.
Douthit, John E.	Clemmonsville,	Davidson,	N. C.	Somatic and Molecular Death.
Dugger, Reuben H.	Macon,	Marengo,	Ala.	Irritable Uterus, its Causes & Treatment.
Duncan, Wm. S.	Brownsville,	Fayette,	Pa.	Emansio Mensium.
Ellis, Andrew J.	Garysburg,	Northampton,	N. C.	Inflammation.
Evans, Horace Y.	Marsh,	Chester,	Pa.	Cataract.
Fleming, C. Edwin	Columbia,	Richland Dist.,	S. C.	Exophthalmia.
Flynn, William	Philadelphia,		Pa.	Typhus Fever.
Gibbes, Robert R.	Beaufort	Beaufort Dist.,	S. C.	The Economy of Nature in the Chemistry of Life.

NAME.	POST-OFFICE.	COUNTY.	STATE.	SUBJECT OF THESIS.
Gibbs, Benj. F.	Freehold,	Monmouth,	N. J.	Man's Relation to Natural Laws.
Gordon, Hiram W.	Madison,	Madison,	Va.	Nephritis.
Granbery, Wm. B.	Macon,	Fayette,	Tenn.	Inflammation.
Gray, Chas.	Annapolis,	Annapolis,	Nova Scotia.	Analogies of Animal and Vegetable Life.
Gregg, James P.	Hublersburg,	Centre,	Pa.	Enteric Fever.
Grier, Wm. P.	Philadelphia,		Pa.	Origin and Progress of Medicine.
Grissom, Eugene	Oxford,	Granville,	N. C.	Cinchona, its Alkaloids and their Salts.
Hanly, Jos. J.	Camden,	Camden,	N. J.	"Medicinæ Doctor."
Harlan, Geo C.	Philadelphia,		Pa.	The Iris.
Hawes, Cary N.	Paris,	Bourbon,	Ky.	Infantile Hygiene.
Hawk, Edward P.	Lambertville,	Hunterdon,	N. J.	Scarlatina.
Hay, William	Millwood,	Clark,	Va.	Aneurism.
Hayes, Robt. F.	New Berlin,	Union,	Pa.	Enteric Fever.
Hess, John F.	Mt. Vernon,	Knox,	Ohio.	Smallpox.
Hill, David W.	Barrington,	Shelburne,	Nova Scotia.	Scarlatina.
Hines, James M.	Marlboro',	Pitt,	N. C.	Arsenic.
Hitch, William J.	Laurel,	Sussex,	Del.	Alcohol.
Hodge, H. Lenox	Philadelphia,		Pa.	Glycerina.
Horton, O. R.	Anderson C. H.,	Anderson Dist.,	S. C.	Remittent Fever.
Houston, Isaac H.	Millsboro',	Sussex,	Del.	The Dissection of the Human Body.
Howard, John	Tarboro',	Edgecombe,	N. C.	Tuberculosis.
Howell, Samuel B.	Camden,	Camden,	N. J.	The History of Circulation
Hurd, Sam'l H. (M. D.)	Charlestown,	Middlesex,	Mass.	The Pancreas.
Hutchinson, Jas. H.	Philadelphia,		Pa.	The Blood.
Jemison, Lewis	Princeton,	Mercer,	N. J.	Irritable Uterus.
Johnston Wm.	Wolfville,	Kings,	Nova Scotia	Carcinoma.
Jones, John Randolph	Hicksford,	Greenville,	Va.	Yellow Fever.
Jones, R. Harrison	Huntsville,	Madison,	Ala.	Hydrocele.
Jones, William J.	Oxford,	Granville,	N. C.	Scarlatina.
Kendall, W. Devereux	Paris,	Henry,	Tenn.	Emetics as Therapeutic Agents.
Kennedy, Stiles E.	Greensboro',	Caroline,	Md.	The Tongue as a Symptom in certain Idiopathic Fevers.
Kercheval, J. M.	Nashville,	Davidson,	Tenn.	Syphilis.
King, Benjamin R.	Leighton,	Lawrence,	Ala.	Veratrum Viride.
Larison, Geo. H.	Sergeantville,	Hunterdon,	N. J.	Phosphorus.
Larkin, Wm. C.	Uniontown,	Perry,	Ala.	The Duties of a Young Physician.
Lea, Calvin D.	Yanceyville,	Caswell,	N. C.	Erysipelas.
Lea, Calvin G.	Milton,	Caswell,	N. C.	A View of the Medical Profession.
Leach, John S.	Raleigh,	Wake,	N. C.	Inflammation.
Leecraft, Lafayette F.	Beaufort,	Carteret,	N. C.	Influences of Intermarriage over Generation.
Lindsay, John L.	Criglersville,	Madison,	Va.	Hepatitis.
Linton, Herman B.	Philadelphia,		Pa.	Diagnosis.
Lipscomb, Moses Q.	Louisa C H.,		Va.	Drinks.
Livezey, Edward	Plymouth Meeting,	Montgomery,	Pa.	Podophillin.
Long, Henry	Mt. Pleasant,	Maury,	Tenn.	Epilepsy.
Lotz, George	New Berlin,	Union,	Pa.	Vaccination.
Maclure, Wm. M. G.	Nassau,	New Providence,	Bahamas.	Yellow Fever.
Martin, Henry F.	Allentown,	Lehigh,	Pa.	Enteric Fever.
Matthews, Benj. B.	Lambertville,	Hunterdon,	N. J.	Vaccination as a Preventive of Smallpox.

NAME.	POST-OFFICE.	COUNTY.	STATE.	SUBJECT OF THESIS.
McCall, Charles A.	Philadelphia,		Pa.	Criminal Abortion.
McGrath, John M.	Philadelphia,		Pa.	Erysipelas.
McLean, Wm. L. D.	Beattie's Ford,	Lincoln,	N. C.	Dysentery.
McTyre, Adoniram R. J.	Midlothian,	Chesterfield,	Va.	Intermittent Fever.
Moore, Thomas J.	Hollidaysburg,	Blair,	Pa.	Arthritis.
Morgan, Isaiah Du Bose	Eutaw,	Green,	Ala.	Medicine.
Newton, John, jr.	Sabathoo,		North India.	Cannabis Indica.
Newman, Thomas	Booth's Corner,	Delaware,	Pa.	Physiology of Life.
Nixon, Thos. M.	Edenton,	Chowan,	N. C.	Pinus Palustris.
Norris, George Pepper	Wilmington,	Newcastle,	Del.	Diabetes.
Norman, H. H.	Plymouth,	Washington,	N. C.	Influences which Modify the Effects of Medicines.
Nott, J. Deas	Mobile,	Mobile,	Ala.	Hygiene.
Oliver, Hillary F.	Greenville,	Butler,	Ala.	Acute Hepatitis.
Ormiston, Robt., jr.	Ox Bow,	Jefferson,	N. Y.	The Atmosphere, its Relation to Life and Disease.
Parker, Richard H.	Portsmouth,	Norfolk,	Va.	Yellow Fever in Portsmouth, Va., during the summer and fall of 1855.
Penrose, Thos. N., jr.	Philadelphia,		Pa.	Coffee.
Phillips, Joseph T.	Margaretsville,	Northampton,	N. C.	Pneumonia.
Pugh, Wm. P.	Jones' Mines,	Randolph,	N. C.	Chlorate of Potassa.
Purnell, George W.	Berlin,	Worcester,	Md.	Yellow Fever.
Putney, William R.	New Canton,	Buckingham,	Va.	Puerperal Fever.
Rayner, Preston	Brownsville,	Haywood,	Tenn.	Bilious Fever.
Read, Rhesa W.	Boston,	Bowie,	Texas.	Pneumonia.
Reed, Thomas Grant	Woodstown,	Salem,	N. J.	Tobacco.
Rice, John H.	Mt. Zion,	Campbell,	Va.	Hydrargyri Chloridum Mite.
Riddle, Willis P.	Eutaw,	Green,	Ala.	The Effects and Use of Ergot as a Motor Stimulant.
Rogers, W. Charles	Norristown,	Montgomery,	Pa.	Variola.
Row, Elhanon W.	Locust Grove,	Orange,	Va.	Pernicious Fever.
Rust, J. M'Afee	Mill Dale,	Warren,	Va.	Pericarditis.
Sarde, Samuel S.	Camden,	Kent,	Del.	Hæmoptysis.
Schell, Henry A.	Gallatin,	Sumner,	Tenn.	Post Partum Hemorrhage.
Schmidt, H. D.	Philadelphia,		Pa.	Microscopical Researches.
Sears, George H.	Six Mile Run,	Middlesex,	N. J.	Hydrophobia.
Servis, Howard	Clinton,	Hunterdon,	N. J.	Phenomena and Result of Inflammation.
Shannonhouse, Jas. J.	Hertford,	Perquimans,	N C.	Calor Animalis.
Sherwood, Thos. H.	Edina,	Knox,	Mo.	Pneumonia.
Shimer, Reuben L.	Easton,	Northampton,	Pa.	Yellow Fever.
Sills, David N.	Belford,	Nash,	N. C.	Scarlatina.
Simms, Benjamin E.	Goldsboro',	Wayne,	N. C.	Venery.
Smith, Robert O.	Paris,	Bourbon,	Ky.	Gonorrhœa.
Somervell, Augustine C.	Sharon,	Tipton,	Tenn.	Intermittent Fever.
Squire, William R.	Gaston,	Northampton,	N. C.	Rubeola.
Stanley, James P.	Somerville,	Fayette,	Tenn.	Miasmatic Remittent Fever.
Stark, Wm. D.	Altoona,	Blair,	Pa.	Railroad Accidents.
Stearnes, John L.	Rocky Mount,	Franklin,	Va.	Dysentery.
Stewart, John R.	Warrenton,	Warren,	N. C.	Duties of a Young Physician.
Stickney, Charles W.	Stockton,	Hunterdon,	N. J.	Scarlatina.
Strait, James L.	Hopewell,	Green,	Ala.	Enteric Fever.

NAME.	POST-OFFICE.	COUNTY.	STATE.	SUBJECT OF THESIS.
Terrell, Henderson	Prospect Hill,	Caswell,	N. C.	Cholera Infantum.
Thome, William H.	Palmyra,	Lebanon,	Pa.	Regimen.
Thornton, Chas. P.	Lumpkin,	Stewart,	Ga.	Veratrum Viride.
Troup, J. R.	Darien,	McIntosh,	Ga.	Heat as a Condition of Vital Activity.
Turner, Wm. Mason	Hicksford,	Greensville,	Va.	Sleep and Death.
Vaughan, Aaron C.	Bedford,	Bedford,	Pa.	Respiration.
Walker, Benj. M.	Plymouth,	Washington,	N. C.	Tetanus, Idiopathic and Traumatic.
Warr, Americus V.	Rossville,	Fayette,	Tenn.	Menorrhagia.
Weber, Jacob	Philadelphia,		Pa.	Scarlatina.
Weber, Robert L.	Pottsville,	Schuylkill,	Pa.	Acute Gastritis.
Williams, Samuel C.	Carlisle,	Cumberland,	Pa.	Phthisis Pulmonalis.
Wimberly, S. H.	Union Springs,	Macon,	Ala.	Æsthetics of Medicine.
Winn, Henry I.	Demopolis,	Marengo,	Ala.	Dyspepsia.
Wiseman, Alfred W.	Farmington,	Davis,	N. C.	Typhous Dengue.
Young, S. D.	Henderson,	Granville,	N. C.	Intermittent Fever.

At a public Commencement, held July, 1857, the Degree of Doctor of Medicine was conferred on—

NAME.	COUNTY.	STATE.	SUBJECT OF THESIS.
George B. Wood,	Sonora,	California,	Duties of the Young Physician.
Charge B. Jennings,	Dubuque,	Iowa,	Auscultation.

Total, 145.

R. E. ROGERS, M. D., *Dean.*

UNIVERSITY OF PENNSYLVANIA—MEDICAL DEPARTMENT.

NINETY-THIRD SESSION (1858–59).

William Gibson, M. D., Emeritus Professor of Surgery.

Samuel Jackson, M. D.,	Professor of Institutes of Medicine.
George B. Wood, M. D.,	Professor of Theory and Practice of Medicine.
Hugh L. Hodge, M. D.,	Professor of Obstetrics and the Diseases of Women and Children.
Joseph Carson, M. D.,	Professor of Materia Medica and Pharmacy.
Robert E. Rogers, M. D.,	Professor of Chemistry.
Joseph Leidy, M. D.,	Professor of Anatomy.
Henry H. Smith, M. D.,	Professor of Surgery.

William Hunt, M. D., Demonstrator of Anatomy.

Clinical Instruction is given at the Pennsylvania Hospital, and throughout the Session, in the Medical Hall, by the Professors.

The Dissecting Rooms, under the superintendence of the Professor of Anatomy and the Demonstrator, are open from the middle of September.

The room for Operative Surgery and the Application of Bandages, &c., is open early in September and throughout the Session, under the supervision of the Professor of Surgery.

Surgical Demonstrator, C. S. BISHOP, M. D.

Fees for the Lectures (each Professor $15)	$105
Matriculation Fee (paid once only)	5
Graduation Fee	30

R. E. ROGERS, M. D., *Dean of the Medical Faculty,*
University Building.

F. B. DICK, *Janitor, University Building.*

JEFFERSON MEDICAL COLLEGE.

The Course of Lectures will commence on Monday, the 11th of October, and continue until the 1st of March.

THOS. D. MÜTTER, M. D.,	Emeritus Professor of Surgery.
ROBERT M. HUSTON, M. D.,	Emeritus Professor of Materia Medica and General Therapeutics.

Institutes of Medicine, etc., ...	By Prof.	ROBLEY DUNGLISON, M. D.
General, Descriptive and Surgical Anatomy, .	"	JOSEPH PANCOAST, M. D.
Obstetrics and Diseases of Women and Children,	"	CHARLES D. MEIGS, M. D.
Chemistry, ...	"	FRANKLIN BACHE, M. D.
Institutes and Practice of Surgery, . .	"	SAMUEL D. GROSS, M. D.
Materia Medica and General Therapeutics, .	"	THOMAS D. MITCHELL, M.D.
Practice of Medicine, ...	"	SAMUEL H. DICKSON, M. D.

Demonstrator of Anatomy, . . ELLERSLIE WALLACE, M. D.

Clinics will be held regularly during the month of September; and every Wednesday and Saturday in the month of October, and during the course, Medical and Surgical cases will be investigated, prescribed for, and lectured on before the Class. During the year ending March the first, 1858, about *sixteen hundred* cases were treated. and about *two hundred and fifty* operations were performed; amongst them many major operations—as amputation of the thigh, leg, forearm and arm at the shoulder-joint, extirpation of the upper jaw, mammæ, eye, testis, &c., lithotomy, trephining, and resection of the head and neck of the humerus.

The lectures are so arranged as to permit the student to attend the medical and surgical practice and lectures at the Pennsylvania Hospital.

On and after the 1st of October, the dissecting rooms will be open, under the direction of the Professor of Anatomy and the Demonstrator.

FEES:

Matriculation, which is paid only once, ...	$ 5
To each Member of the Faculty $15, ...	105
Graduation, ...	30

ROBLEY DUNGLISON, M. D.,
Dean of the Faculty.

PHILADELPHIA COLLEGE OF MEDICINE.

FIFTH STREET, BELOW WALNUT.

SESSION 1858-9.

FACULTY.

B. HOWARD RAND, M. D.,	Professor of	Chemistry.
HENRY HARTSHORNE, M. D.,	"	Practice of Medicine.
LEWIS D. HARLOW, M. D.,	"	Obstetrics, &c.
WILLIAM S. HALSEY, M. D.,	"	Surgery.
WM. HEMBEL TAGGART, M. D.,	"	Materia Medica.
JAMES AITKEN MEIGS, M. D.,	"	Institutes of Medicine.
W. H. GOBRECHT, M. D.,	"	Anatomy.

WILLIAM BRADLEY, M. D , Demonstrator of Anatomy.

FEES: Matriculation, $5; one Full Course, $100; Perpetual Ticket, $150: Graduation, $30; Practical Anatomy, $10; Material for Dissection, *free*. Second course Students are furnished with the Hospital Ticket *without charge*. Lectures will commence early in October, and terminate in March. A Supplementary Course is given, also, during the Summer.

For further information, address B. HOWARD RAND, M. D., *Dean*.

PENNSYLVANIA COLLEGE—MEDICAL DEPARTMENT.

SESSION OF 1858-59.

FACULTY.

David Gilbert, M. D.,	Professor of Obstetrics and Diseases of Women and Children.
Alfred Stillé, M. D.,	Professor of Theory and Practice of Medicine.
John Neill, M. D.,	Professor of Principles and Practice of Surgery.
John J. Reese, M. D.,	Professor of Medical Chemistry.
John B. Biddle, M. D.,	Professor of Therapeutics and Materia Medica.
Francis G. Smith, M. D.,	Professor of Institutes of Medicine.
J. H. B. McClellan, M. D.,	Professor of Special and Surgical Anatomy.

J. Frank Bell, M. D., Demonstrator of Anatomy.

The Session of 1858-9 will commence on Monday, 11th of October, and continue, without intermission, until the first of March. The examination of candidates for the Degree of Doctor of Medicine will be held at the close of the Session. The Commencement for conferring Degrees will take place early in March, causing as little detention of the Graduating Class, after the close of the Lectures, as possible.

There will also be an examination of candidates for graduation, on the 1st of July; the Degree, in such cases, being conferred at the ensuing Commencement in March.

The Rooms for Practical Anatomy will be open early in September.

The College Clinic will be conducted on every Wednesday and Saturday throughout the Session.

The Register of Matriculants will be open in the College Building, early in September. The Janitor will always be present at the College, to give every necessary assistance and information (as regards board, &c.) to students, on their arrival in the city.

FEES.

Matriculation (paid once only)	$ 5 00
For each Professor's ticket	15 00
Graduation	30 00

FRANCIS G. SMITH, M. D., *Registrar*,

July, 1858. *No.* 1504 *Walnut above* 15*th Street.*

MEDICAL COLLEGE OF VIRGINIA.

SESSION OF 1858-'59.

The Course of Lectures will commence on Monday, the 4th of October, and continue until the 1st of March.

Charles Bell Gibson, M. D.,	Professor of Surgery and Surgical Anatomy.
David H. Tucker, M. D.,	Professor of Theory and Practice of Medicine.
Martin P. Scott, M. D.,	Professor of Chemistry and Pharmacy.
Beverley R. Wellford, M. D.,	Professor of Materia Medica and Therapeutics.
Arthur E. Peticolas, M. D.,	Professor of Anatomy.
Levin S. Joynes, M. D.,	Professor of Institutes of Medicine and Medical Jurisprudence.
James H. Conway, M. D.	Professor of Obstetrics and Diseases of Women and Children.
Marion Howard, M. D.,	Demonstrator of Anatomy.

The study of Practical Anatomy may be prosecuted with the most ample facilities, and at a very trifling expense.

The Infirmary, under the same roof with the College, is at all times well filled with Medical and Surgical cases, and furnishes peculiar advantages for Clinical Instruction. Students also enjoy the Clinical facilities afforded by the Richmond Almshouse.

FEES.

For the entire Course	$105
Practical Anatomy	10
Matriculation Fee	5
Graduation Fee	25

L. S. JOYNES, M. D.,
Dean of the Faculty.

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

The annual Course of Lectures in this Institution will commence on the *second Monday in November*, upon the following branches:—

Anatomy	J. E. Holbrook, M. D.
Surgery	J. J. Chisholm, M. D.
Theory and Practice of Medicine . .	P. C. Gaillard, M. D.
Materia Medica	Henry R. Frost, M. D.
Physiology	James Moultrie, M. D.
Obstetrics	Thomas G. Prioleau, M. D.
Chemistry	C. U. Shepard, M. D.
Demonstrator of Anatomy . . .	Francis T. Miles, M. D.

CLINICAL LECTURES.

F. Peyre Porcher, M. D., Physician to the Marine Hospital and Clinical Instructor, lectures twice a week on the diseases of that Institution.

At the *Roper Hospital* Clinical Lectures are delivered twice a week by the Physician and Surgeon of the Institution, and operations performed before the class in the Amphitheatre of the Hospital.

The *Faculty Ward in the Roper Hospital*, by the conveniences which have been furnished, is a valuable addition to the surgical practice of the city. Operations are performed before the class, and students have opportunities of being made familiar with the subsequent treatment.

The Anatomical Rooms will be opened in October, and dissections conducted daily by the Demonstrator. Much attention is directed to this department; the material being abundant, and illustrations of a varied character being afforded for acquiring a competent knowledge of this very important branch.

The Faculty of the Medical College of the State of South Carolina take pleasure in calling the attention of the friends of the Institution to its present prosperous condition. They have been enabled, by the liberality of the Legislature, to make such alterations in extending and improving the College building as will promote materially the comfort of those in attendance on the Lectures.

The Anatomical Theatre has been enlarged and completely renovated. and such changes made as will secure free ventilation, with a pleasant arrangement of the seats. They confidently believe that it will not suffer in comparison with any like structure in the United States, the edifice, with its appurtenances, being as commodious and attractive as any such establishment in the country. By the same appropriation of the Legislature, they have been enabled to make considerable addition to the Museum of the College.

In the Surgical department considerable additions have been made in drawings, plates, &c., and the collection of articles in the Materia Medica has been made very extensive and complete.

The Anatomical Museum has been much enlarged by models of the sympathetic nerve, and the superficial veins, lymphatics, and nerves.

There has also been added a valuable and interesting collection in wax, illustrating various parts of the body in a healthy and diseased state.

HENRY R. FROST, *Dean.*

June 14, 1858.

FISKE MEDICAL PRIZE QUESTIONS.

THE TRUSTEES OF THE FISKE FUND,

AT THE

ANNUAL MEETING OF THE RHODE ISLAND MEDICAL SOCIETY,

Held at Newport, June 16, 1858, gave notice that no awards had been made on the questions proposed by them for the year 1858.

They propose the following subject for 1859:—

THE EFFECTS OF THE USE OF ALCOHOLIC LIQUORS ON TUBERCULAR DISEASE, OR IN CONSTITUTIONS PREDISPOSED TO SUCH DISEASE.

To be shown by facts presented as far as possible in a statistical form.

For the best dissertation on this subject the Trustees will pay Two Hundred Dollars.

Every competitor for a premium is expected to conform to the following regulations, viz:—

To forward to the Secretary of the Trustees, on or before the first day of May, 1859, free of all expense, a copy of his dissertation, with a motto written thereupon, and also accompanying a sealed packet, having the same motto inscribed upon the outside, and his name and place of residence within.

Previously to receiving the premium awarded, the author of the successful dissertation must transfer to the Trustees all his right, title and interest in and to the same, for the use, benefit and behoof of the Fiske Fund.

Letters accompanying the unsuccessful dissertations will be destroyed by the Trustees, unopened, and the dissertations may be procured by their respective authors, if application be made therefor within three months.

JAS. H. ELDREDGE, M. D., E. Greenwich,
CHAS. W. PARSONS, M. D., Providence, } *Trustees.*
HENRY E. TURNER, M. D., Newport.

S. AUG. ARNOLD, M. D., *Providence, Secretary.*

TO READERS AND CORRESPONDENTS.

We hope in our next number to present to our readers an account of the very interesting researches of Dr. H. D. Schmidt, of this city, on the microscopic structure of the liver. Dr. S. has been eminently successful in his injections of this organ, and by the assistance of an instrument of his own invention—which he terms a microscopic dissector—he has been able to conduct his examinations and dissections with great advantage. Dr. S. has also devised an instrument, by the aid of which he is able to make very thin sections of organs. He has made sections of the spinal marrow so thin, that fine print could be read through them.

A number of communications are on hand which shall receive early attention. A description of these will accompany the paper.

The following works have been received:—

Epilepsy and other Convulsive Affections, their Pathology and Treatment. By Charles Bland Radcliffe, M. D., Physician to Westminster Hospital, &c. Second edition, revised and enlarged. London. J. Churchill, 1858. (From the Author.)

The Diagnosis of Surgical Cancer. By John Zachariah Laurence, F. R. C. S., M. B., Lond., Surgeon to the South London Ophthalmic Hospital, &c. &c. Second edition. London, John Churchill, 1858. (From the Author.)

A Treatise on the Pathology of the Urine, including a complete guide to its analysis. By J. L. W. Thudichum, M. D., &c. &c. With seven plates. John Churchill, 1858. (From the Author.)

Lectures on the Principles and Practice of Physic, delivered at King's College, London. By Thomas Watson, M. D., F. R. C. P., late physician to the Middlesex Hospital, &c. A new American, from the last revised, and enlarged English edition. With additions, by D. Francis Condie, M. D., F. R. C. P. P., &c. &c. With one hundred and eighty-five illustrations on wood. Philadelphia: Blanchard & Lea, 1858. (From the Publishers.)

A Manual of Psychological Medicine: containing the history, nosology, description, statistics, diagnosis, pathology, and treatment of insanity. With an appendix of cases. By John Charles Bucknill, M. D., Medical Superintendent of the Devon County Lunatic Asylum, &c. &c. &c., and by Daniel H. Tuke, M. D., Visiting Medical Officer to the York Retreat, &c. &c. Philadelphia: Blanchard & Lea, 1858. (From the Publishers.)

A Practical Treatise on the Causes, Symptoms, and Treatment of Spermatorrhœa. By M. Lallemand, formerly Prof. of Clin. Surg. at the University of Montpellier, &c. Translated and edited by Henry J. McDougall. Third American edition, to which is added On Diseases of the Vesiculæ Seminales, and their associate organs, with special reference to the morbid secretions of the prostatic and urethral mucous membrane. By Marris Wilson, M. D. Philadelphia: Blanchard & Lea, 1858. (From the Publishers.)

Diseases of the Urinary Organs. A Compendium of their Diagnosis, Pathology, and Treatment. By Wm. Wallace Morland, M. D., Fellow of the Mass. Med. Soc., &c. &c. With illustrations. Philadelphia: Blanchard & Lea, 1858. (From the Publishers.)

A System of Human Anatomy, General and Special. By Erasmus Wilson, F. R. S., author of Dissector's Manual. A new and revised American, from the last and enlarged English edition. Edited by W. H. Gobrecht, M. D., Prof. Anat. in Philad. Med. Coll. With 397 illustrations. Philadelphia: Blanchard & Lea, 1858. (From the Publishers.)

A Treatise on the Practice of Medicine. By Geo. B. Wood, M. D., Prof. Theory and Pract. Med. in Univ. of Penna. Fifth edition. In two vols. Philada.: Lippincott & Co., 1858. (From the Author.)

An Essay on the Pathology and Therapeutics of Scarlet Fever. By Caspar Morris, M. D., &c. Philadelphia: Lindsay & Blakiston, 1858. (From the Publishers.)

The Uræmic Convulsions of Pregnancy, Parturition, and Childbed. By Dr. Carl R. Braun, Prof. of Midwifery, Vienna. Translated from the German, with notes by J. M. Duncan, F. R. C. P. E., etc. New York: S. S. & W. Wood, 1858. (From the Publishers.)

Proceedings of the Sixty-Sixth Annual Convention of the Connecticut Medical Society, May. 1858. With a list of members. Hartford, 1858.

Minutes of the Ninth Annual Meeting of the Medical Society of the State of North Carolina, held at Newbern, N. C., May, 1858. Wilmington, 1858.

The Transactions of the New Hampshire Medical Society, sixty-eighth anniversary, held at Concord, June 1st and 2d, 1858. Manchester, 1858.

Minutes of the Proceedings of the Second Annual Meeting of the Quarantine and Sanitary Convention, convened in the city of Baltimore, April 20th, 1858. Baltimore, 1858.

Catalogue of the Surgical and Pathological Museum of Valentine Mott, M. D., &c., and of his son, Alex. B. Mott, M. D., &c. New York, 1858. (From Dr. A. B. Mott.)

Human Cestoides. An Essay on the Tapeworms of Man, giving a full account of their nature, organization, and embryonic development, the pathological symptoms they produce, and the remedies which have proved successful in modern practice. By D. F. Weinland, Ph. D. Cambridge, 1858.

Communications to the Massachusetts Medical Society. By Ephraim Cutter, M. D., of Woburn, Mass. (Extracted from the Society's Publications), Boston, 1858. (From the Author.)

Physiology, Pathology, and Therapeutics, of Muscular Exercise. A paper read before the Cook County Medical Society, and published at their request. By W. H. Byford, M. D., Chicago, 1858. (From the Author.)

Formulæ for making Tinctures, Infusions, Syrups, Wines, Mixtures, Pills, Simple and Compound, from the Fluid and Solid Extracts. Prepared at the Laboratory of Tilden & Co., New Lebanon. N. Y., Tilden & Co., 1858. (From the Publishers.)

The following Journals have been received in exchange:—

Annales Médico-Psychologiques. Par les Docteurs Baillarger, Cerise, et Moreau, April, 1858.

Bibliothèque Universelle Revue Suisse et Etrangère. Archives des Sciences Physiques et Naturelles. May, 1858.

Le Moniteur des Hôpitaux, Revue Médico-Chirurgicale de Paris. Redacteur en Chef, M. H. De Castelnau. June, July, Aug., Sept., 1858.

Journal de Médecine de Bordeaux. May, June, July, 1858.

Edinburgh Medical Journal. June, July, 1858.

Medical Times and Gazette. June, July, Aug., 1858.

British Medical Journal. Edited by Andrew Winter, M. D. June, July, Aug., 1858.

The Dublin Hospital Gazette. May, June, July, 1858.

The British and Foreign Medico-Chirurgical Review. July, 1858.

The Half-Yearly Abstract of the Medical Sciences. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. Jan.—June, 1858.

The Retrospect of Medicine. Edited by W. Braithwaite. Jan.—June, 1858.

The Sanitary Review. Edited by Benj. W. Richardson, M. D. July, 1858.

The Liverpool Medico-Chirurgical Journal. July, 1858.

The Journal of Psychological Medicine. Edited by Forbes Winslow, M. D. July, 1858.

The Dublin Quarterly Journal of Medical Science. Aug., 1858.

Edinburgh Veterinary Review. July, 1858.

The Medical Chronicle. Edited by Wm. Wright, M. D., and D. C. MacCallum, M. D. July, Aug., Sept., 1858.

The Boston Medical and Surgical Journal. Edited by W. W. Morland, M. D., and Francis Minot, M. D. July, Aug., Sept., 1858.

The American Journal of Pharmacy. Edited by William Procter, Jr., Prof. of Pharm. in Phil. Coll. Pharm. July, Sept., 1858.

Charleston Medical Journal and Review. Edited by J. Dickson Bruns, M. D. July, Sept., 1858.

New Orleans Medical and Surgical Journal. Edited by Bennet Dowler, M. D. July, Sept., 1858.

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The New Orleans Medical News and Hospital Gazette. July, Aug., Sept., 1858.

Buffalo Medical Journal. Edited by Austin Flint, Jr., M. D. July, Aug., Sept., 1858.

Virginia Medical Journal. Edited by Drs. McCaw and Otis. July, Aug., Sept., 1858.

The Maine Medical and Surgical Reporter. Conducted by W. R. Richardson, M. D., and R. W. Cummings, M. D. June, July, Aug., Sept., 1858.

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The Medical and Surgical Reporter. Edited by S. W. Butler, M. D., and W. B. Atkinson, M. D. July, Aug., Sept., 1858.

The Chicago Medical Journal. Edited by N. S. Davis, M. D., and W. H. Byford, M. D. June, 1858.

The American Medical Gazette. Edited by D. M. Reese, M. D. July, Aug., Sept., 1858.

The Dental News Letter. Edited by J. D. White, D. D. S., and J. R. McCurdy, D. D. S. July, 1858.

The North American Medico-Chirurgical Review. Edited by S. D. Gross, M. D., and T. G. Richardson, M. D. July, Sept., 1858.

The Ohio Medical and Surgical Journal. Edited by John Dawson, M. D., and J. W. Hamilton, M. D. July, Sept., 1858.

Oglethorpe Medical and Surgical Journal. Edited by H. L. Byrd, M. D., and H. Steele, M. D. April, 1858.

Nashville Journal of Medicine and Surgery. Edited by W. K. Bowling, M. D. July, Aug., Sept., 1858.

The American Journal of Dental Science. Edited by Chapin A. Harris, M. D., and A. Snowden Piggot, M. D. July, 1858.

The Cincinnati Lancet and Observer. Edited by Geo. Mendenhall, M. D., and Ed. B. Stevens, M. D. July, Aug., Sept., 1858.

The Pacific Medical and Surgical Journal. Edited by J. B. Trask, M. D., and David Wooster, M. D. June, July, 1858.

The American Druggists' Circular and Chemical Gazette. July, Aug., Sept., 1858.

The New York Journal of Medicine. Edited by Stephen Smith, M. D. July, Sept., 1858.

The Peninsular and Independent Medical Journal. Edited by Drs. Palmer, Gunn, and Mr. F. Stearns. July, Aug., Sept., 1858.

The Savannah Journal of Medicine. Edited by J. S. Sullivan, M. D., J. Harris, M. D., and R. D. Arnold, M. D. July, Sept., 1858.

The New Hampshire Journal of Medicine. Edited by G. H. Hubbard, M. D. July, Aug., Sept., 1858.

The American Journal of Insanity. July, 1858.

The Nashville Monthly Record of Medical and Physical Science. Edited by D. F. Wright, M. D., and R. O. Currey, M. D. Sept., 1858.

The New York Dental Journal. Edited by F. H. Norton, and Geo. H. Perine. July, 1858.

Atlanta Medical and Surgical Journal. Edited by Jos. P. Logan, M. D., and W. F. Westmoreland, M. D. July, Aug., Sept., 1858.

St. Louis Medical and Surgical Journal. Edited by M. L. Linton, M. D., and W. M. McPheeters, M. D. July, Sept., 1858.

The American Journal of Science and the Arts. Edited by Profs. B. Silliman, B. Silliman, Jr., and J. D. Dana. Sept., 1858.

The Belmont Medical Journal. June, Aug., 1858.

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CONTENTS

OF THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

NO. LXXII. NEW SERIES.

OCTOBER, 1858.

ORIGINAL COMMUNICATIONS.

MEMOIRS AND CASES.

ART. PAGE

I. Veratrum Viride as an Arterial Sedative. A Mutual Paper made up of Contributions from the Members of the Middlesex East District Medical Society of Massachusetts. Compiled for the Society by Ephraim Cutter, M. D., of Woburn, Truman Rickard, M. D., of Woburn, and William Ingalls, M. D., of Winchester. - - - - - - - - - - 305

II. Account of the Yellow Fever, as it occurred on board the U. S Frigate "Susquehanna," in March and April, 1858. By Robert T. Maccoun, M. D., U. S. Navy. (Communicated by W. Whelan, M. D., Chief Bureau Medicine, U. S. N.) - - - - - - - - - - 324

III. Report of an Epidemic of Typhoid Pneumonia, which prevailed in Caswell Co., N. C., in the Winter of 1857-8, and Spring of 1858. By Bedford Brown, M. D., Yanceyville, Caswell Co., N. C. - - - 330

IV. Histological Remarks upon a Secondary Cancer of the Pleura. By J. J. Woodward, M. D., Assistant to the Surgical Clinic of the University of Pennsylvania. [Read before the Biological Department of the Academy of Natural Sciences of Philadelphia, June 21, 1858.] - - 334

V. Remarkable Cases in Midwifery. By Geo. Shedd, M. D., of Denmark, Iowa. - - - - - - - - - - - - - - - - 341

VI. "Meddlesome Midwifery is bad" (Blundell).—A dissertation read before the New London County Medical Society in 1854. By Isaac G. Porter, M. D., of New London, Connecticut. - - - - - - - 345

VII. Midwifery Cases. By Richard McSherry, M. D., of Baltimore. - 352

VIII. Exsection of the Entire Fibula for Fibro-Cartilaginous Degeneration of the Bone. By A. Reeves Jackson, M. D., of Stroudsburg, Pa. - 357

IX. Dynamoscopy. By J. M. F. Gaston, M. D., Columbia, S. C. - - 360

X. Two Successful Cases of Ovariotomy by the Large Abdominal Section. By E. R. Peaslee, A. M., M. D., Prof. of Surgery, &c. - - - - 364

XI. A Homely Substitute for Cod-Liver Oil. By Richard McSherry, M. D., of Baltimore. - - - - - - - - - - - - - 375

XII. Case of Poisoning by Gases of a Privy Sink, and Recovery. By Dr. S. J. Radcliff, of Baltimore, Md. - - - - - - - - - - 377

TRANSACTIONS OF SOCIETIES.

ART. PAGE

XIII. Summary of the Transactions of the College of Physicians of Philadelphia. - - - - - - - - - - - - - - - - - 379

Some Facts in Relation to the Nocturnal Incontinence of Urine in Children. By Dr. Addinell Hewson. - - - - - - - 379

Inability to Distinguish Colours. By Dr. Hays - - - - - 394

New Apparatus for Fracture of the Thigh. By Dr. Henry Hartshorne. - - - - - - - - - - - - - - - 394

Cancer of the Clitoris. By Dr. Corse. - - - - - - - 398

Cancer of the Neck. By Dr. Corse. - - - - - - - - 399

Gout. By Dr. Ruschenberger. - - - - - - - - - 400

Typhoid Fever without Tympanites. By Dr. Levick. - - - 403

Exhaustion from Heat (Sun-stroke). By Dr. Levick. - - - 404

Foreign Body in the Ear. By Dr. Corse. - - - - - - 408

Uterus taken from a Patient who had died, of Acute Disease of the Brain, whilst Menstruating. By Dr. W. W. Gerhard, with an account of the *post-mortem* appearances. By Dr. Packard. - 410

Cancer and Abscess of the Liver. By Dr. Levick. - - - 411

REVIEWS.

XIV. A Manual of Psychological Medicine, containing the History, Nosology, Description, Statistics, Diagnosis, Pathology and Treatment of Insanity. With an appendix of cases. By John Charles Bucknill, M.D., Lond., L. R. C. P., Medical Superintendent of the Devon County Lunatic Asylum, &c. &c. &c.; and by Daniel H. Tuke, M.D., L. R. C. P., Lecturer on Psychological Medicine at the York School of Medicine, and Visiting Medical Officer of the York Retreat. Philad.: Blanchard & Lea, 1858. Pp. 536, 8vo. - - - - - - - - - - - 413

XV. Clinical Lectures on the Principles and Practice of Medicine. By John Hughes Bennett, M. D., F. R. S. E., Professor of the Institutes of Medicine, and Senior Professor of Clinical Medicine in the University of Edinburgh. Second edition, New York, Samuel S. and W. Wood, 1858; pp. 951, 8vo. - - - - - - - - - - - - 429

XVI. Observations on Naval Hygiene and Scurvy, more particularly as the latter appeared during a Polar Voyage. By Alex. Armstrong, M. D. R. N., etc. etc. Author of a Personal Narrative of the Discovery of the Northwest Passage. 8vo. pp. 117. John Churchill: London, 1858. - 438

XVII. The Ganglionic Nervous System; its Structure, Functions, and Diseases. By James George Davey, M. D., M. R. C. S. Lond., &c. &c. London: John Churchill, 1858. 8vo. pp. 309. - - - - - - 445

BIBLIOGRAPHICAL NOTICES.

XVIII. Transactions of American Medical Societies.

1. Transactions of the Medical Society of the State of New York, at its Annual Session of 1858. 8vo. pp. 655. Albany, 1858.
2. Proceedings of the Sixty-Sixth Annual Convention of the Connecticut Medical Society, May, 1858. 8vo. pp. 120. Hartford, 1858.
3. Transactions of the Twelfth Annual Meeting of the Ohio State Medical Society, held in the City of Sandusky, June, 1857. 8vo. pp. 226. Sandusky, 1857.
4. The Transactions of the Belmont Medical Society, for 1856–57. 12mo. pp. 70. Bridgeport, Ohio, 1858. - - - - - - - - 449

ART. PAGE

XIX. Reports of American Institutions for the Insane.
  1. Of the New York State Lunatic Asylum, for 1857.
  2. Of the New York City Lunatic Asylum, for 1857.
  3. Of the New Jersey State Lunatic Asylum, for 1857.
  4. Of the Friends' Asylum, Philadelphia, for 1857. - - - - - 468

XX. A Treatise on the Practice of Medicine. By George B. Wood, M. D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania, etc. etc. 2 vols. 8vo. Fifth edition. Pp. 888–904. J. B. Lippincott & Co.: Philadelphia, 1858. - - - - - - - - 474

XXI. Guy's Hospital Reports. Edited by Samuel Wilks, M. D., and Alfred Poland. Third Series, Vol. III. London, 1857. 8vo. pp. 513. - 475

XXII. Researches on Epilepsy: its Artificial Production in Animals, and its Etiology, Nature, and Treatment in Man. By E. Brown-Séquard, M. D., Professor of Physiology at the Cooper Institute, New York, etc. etc. Republished from the Boston Medical and Surgical Journal, from Nov., 1856, to Nov., 1857. Boston, 1857. 8vo. pp. 82. - - - 488

XXIII. A Report on Diseases of the Cervix Uteri; read before the Medical Society of the State of Georgia, at the Annual Meeting in Augusta, April, 1857. By Joseph A. Eve, M. D., Professor of Obstetrics and Diseases of Women and Children, in the Medical College of Georgia. 8vo. pp. 42. Augusta, 1857. - - - - - - - - - - 495

XXIV. Observations on Malarial Fever. By Joseph Jones, A. M., M. D., Professor of Physics and Natural Theology in the University of Georgia, Athens; Professor of Chemistry and Pharmacy in the Medical College of Georgia, Augusta, etc. etc. 8vo. pp. 84. [From the Southern Medical Journal, 1858.] - - - - - - - - - - - - 498

XXV. Pathology and Treatment of the Paralysis of Motion. By J. P. Batchelder, M. D., New York. 8vo. pp. 62. 1858. - - - - - 500

XXVI. Report upon some of the more Important Points Connected with the Treatment of Syphilis. By Holmes Coote, F. R. C. S., &c. London, 1857. Octavo, pp. 141. - - - - - - - - - - 503

XXVII. Journal de la Physiologie de l'Homme et des Animaux. Publié sous la direction du docteur E. Brown-Séquard. Tome premier, Avril, 1858. Paris: J. B. Baillière et Fils; Londres et New York. H. Baillière. 505

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

FOREIGN INTELLIGENCE.

Anatomy and Physiology.

PAGE
1. New Structure in the Spermatic Cord. By M. Giraldes. - 509
2. Normal Existence of Urea in Healthy Perspiration. By Funcke. - - - - - - 510
3. Accommodation of the Eye. By Graefe. - - - - - 510

PAGE
4. Physiology of the Nervous System. By Brown-Séquard. - 510
5. Investigations respecting the Development of Teeth. By M. Guillot. - - - - - - 511
6. Absence of the Left Kidney. By Prof. Förster. - - - 511

Materia Medica and Pharmacy.

7. Influence of Liquor Potassæ and other fixed Caustic Alkalies upon the Therapeutic Properties of Henbane, Belladonna, and Stramonium. By Dr. A. B. Garrod. - - - - - - - - 512
8. Action of Solutions of Chlorate of Soda and Chlorate of Potash on False Membranes Extracted from the Air-passages. By M. Barthez. - - - - - 513
9. Value of Iodide of Iron. - - 516
10. Therapeutical Uses of Strychnia. By Dr. H. R. de Ricci. - 517
11. Saoria as a Remedy for Tapeworm. By Dr. Strohl. - - 518
12. Iodide of Calcium. By Dr. J. Pidduck. - - - - - - 519
13. New Local Application in Erysipelas. By M. Anciaux. - 519

Medical Pathology and Therapeutics, and Practical Medicine.

14. Diphtheritic Affections. By M. Isambert. - - - - - 519
15. Epidemic Diphtheritic Angina at Lima. - - - - - 520
16. Diphtheria or Diphtherite. By David Thompson, Esq. - - 522
17. Effect of Local Influences on Spasmodic Asthma. By Dr. Hyde Salter. - - - - - 523
18. The Diagnosis of Pulmonary Consumption at its Commencement. By Dr. Scott Alison. - 524
19. Diet in Phthisis. By M. Champouillon. - - - - - 525
20. Diabetes from Cerebral Diseases. By M. Leudet. - - 527
21. Rationale of the Saccharine Treatment of Diabetes. By Dr. John Sloane. - - - - - 528
22. Researches on Gout. By Dr. A. B. Garrod. - - - - - 532
23. Abdominal Typhus. By Dr. Lebert. - - - - - - 533
24. Incubation of Measles. By Dr. Kerschensteiner. - - 536
25. Inversion of the Body for the Relief of the Symptoms Produced by the Passage of a Renal Calculus along the Ureter. By Prof. Simpson. - - - - - 536
26. The Diagnosis of Deafness. By Dr. Erhard, of Berlin. - 536

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

PAGE
27. Tetanus successfully treated with Extract of Indian Hemp. By Mr. E. W. Skues. - - 538
28. Affections of the Joints following Operations on the Genito-Urinary Organs. By Wm. Coulson, Esq. - - - - - 539
29. Medical Treatment and Diagnosis of Stone in the Bladder. By Dr. A. H. Hassall. - - 540
30. Fracture through the Trochanters of the Thigh-Bone. By James Syme, Esq. - - - 542
31. Ovarian Dropsy Cured by Simple Puncture. By Prof. Oppolzer. - - - - - - - 544
32. Carcinomatous Growth Removed by a Pen and Escharotics. By Prof. Simpson. - - - 545
33. Treatment of Ulcers by Caustic Lint. By M. Riboli. - - 545
34. Metallic Sutures and Metallic Ligatures. By Prof. Simpson. 545
35. Size of Male and of Female Larynx. By Dr. Struthers. - 546

OPHTHALMOLOGY.

36. On the Influence of the Cervical Portions of the Sympathetic Nerve and Spinal Cord upon the Eye and its Appendages. By Dr. John W. Ogle. - - - 546
37. Sympathetic Inflammation of the Eyeball. By Dr. P. H. Watson. - - - - - - - 547
38. Amaurosis. By Drs. R. Hamilton, and Mr. B. Bell. - - 548
39. Secale Cornutum in Asthenopia. By Prov. Von Willebrand. 550
40. Malposition of the Lachrymal Canaliculi. By Mr. Haynes Walton. - - - - - - 550
41. Six Cases of Cataract in the same Family. By Mr. J. F. Streatfeild. - - - - - 551
42. Chloride of Zinc and Glycerine in Ophthalmia of New-Born Children. By Dr. A. Macmillan. - - - - - - - 551

MIDWIFERY.

43. Menstruation in Austria. By Dr. Ferd. Szukits. - - - 552
44. How Many Children Can a Woman Bear? By Dr. Szukits. 554
45. Beneficial Effects of Pepsine in the Obstinate Vomiting of Pregnancy. By L. Gros. M. D. 554
46. On the Condition of the Cervix Uteri during the latter half of Pregnancy. By M. Caseaux. 555
47. Shortening the Duration of Labour. By Dr. J. Gray. - 557
48. Uva Ursi as an Obstetrical Agent. By Dr. De Beauvais. - 557
49. Laudanum in Painful Affections of the Uterus. By M. Aran. - - - - - - 557
50. Anæsthetic Powers of Carbonic Acid in Diseases of the Female Bladder. By Dr. Robert Johns. - - - - - - 558
51. Iodide of Potassium for Dispersion of the Milk. By M. Roussel. - - - - - - 561

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

52. Death from Swallowing Oil of Turpentine. By John Maund, M. D. - - - - - - 561
53. Rupture of the Spleen. By Dr. George R. Playfair. - - 563
54. Poisoning by Conium Maculatum. By Dr. T. Skinner - 564

AMERICAN INTELLIGENCE.

Original Communications.

PAGE

Additional Remarks on Dynamoscopy. By J. M. F. Gaston, M. D., of Columbia, S. C. - - 565

Muriatic Acid in Scarlet Fever; Caution in regard to the Use of Calomel. By Richard McSherry, M. D., of Baltimore, Md. - 567

Experiments with Bibron's Antidote to the Poison of Reptiles. By E. M. Walker, M. D., of Gonzales, Texas. - - - - 567

Convulsions after Delivery—Constipation—Capsicum given in enema—Recovery. By G. W. Yeager, M. D., of Mercer, Pa. - 569

Case of Poisoning by Seidlitz Powders. Reported by William P. Buel, M. D., Surgeon Pac. Mail Co. - - - - - - - 570

Successful Case of Ovariotomy Performed by Dr. Hazard A. Potter. By Charles N. Hewitt, M. D., of Geneva, N. Y. - - 571

Domestic Summary.

Trephining the Lower Jaw for Neuralgia. By Dr. J. Mason Warren. 574

Experiments with Bibron's Antidote. By Dr. A. M. Sabal. - 575

Veratrum Viride. By Dr. H. H. Toland. - - - - - - 576

Veratrum Viride as an Arterial Sedative. By Dr. T. S. Smith. 577

Sulphate of Cinchonia an economical substitute for Quinia. By Dr. F. P. Porcher. - - - 577

Remedy for Dysmenorrhœa and consequent Sterility. By Dr. E. D. Fenner. - - - - - 577

Results of 28 Operations for Stone in the Bladder. By Dr. P. C. Spencer. - - - - - 578

Extirpation of the Parotid Gland. By Dr. Frank H. Hamilton. - 578

Removal of the Scapula. By Dr. Geo. C. Blackman. - - - 578

Method of Preserving Specimens of Diseased Membranes. By Dr. R. D. Arnold. - - - 578

Persulphate of Iron as an Hæmostatic. By Dr. H. H Toland. - 579

Ovariotomy—the Pedicle severed by the écraseur. By Dr. J. L. Atlee. - - - - - - 579

Five cases of Cataract in one Family. By Dr. H. W. Williams. 580

New Publications. - - - 580

THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR OCTOBER 1858.

ART. I.—*Veratrum Viride as an Arterial Sedative.* A Mutual Paper made up of Contributions from the Members of the Middlesex East District Medical Society, Massachusetts. Compiled for the Society by EPHRAIM CUTTER, M. D., of Woburn, TRUMAN RICKARD, M. D., of Woburn, and WILLIAM INGALLS, M. D., of Winchester.

IT has been said that he who causes two blades of grass to grow where before there had been but one, is justly entitled to be called a public benefactor. How much more, then, does this honourable appellation belong to him who extends the boundaries of therapeutics, who increases the number of truly valuable remedial agents, thereby adding strength to the panoply wherewith we seek to break or turn aside the shafts of disease and death. It has ever been the belief of some that nature has in store an antidote for every disease to which the human race is subject. Be this as it may, one thing is certain—if we interrogate her within her hidden retreats, and seek to extort truth from her grasp by the tortures of the retort and the crucible, she has been wont not seldom to reward our labours and our researches by disclosing to us facts not only of the highest interest to science, but often of untold value to the health and well-being of mankind.

The thought must have occurred many a time to the experienced practitioner, while looking anxiously upon the wasting and unchecked ravages of fever, by whatever cause produced, that could he summon to his aid some potent remedy, the sure effect of which would be a marked reduction in the frequency of the pulse, without danger to life, he would have it in his power to exert a control over the disease, and render the restoration of his patient more sure and speedy.

Among the recent additions to the Materia Medica is to be reckoned the

VERATRUM VIRIDE. As early as 1835, Dr. Samuel Osgood, of Providence, R. I., a pupil of Prof. Tully, of New Haven, called the attention of the medical profession to this plant, by an article in the *American Journal of the Medical Sciences* (vol. xvi. p. 296). Even before that time its properties were not wholly unknown, and it was used, to a limited extent, in certain diseases, particularly rheumatism. Nevertheless, it ere long fell into disuse, for the reason, it may be, that it failed of proving a specific in rheumatism, while colchicum, whose star was then in the ascendant, bid fair of attaining to that distinguished honour. Some seven or eight years ago, attention was called anew to the American veratrum by Dr. W. C. Norwood, of Cokesbury, S. C. Articles appeared occasionally in some of the medical journals, respecting its properties. In November, 1856, the Middlesex East District Medical Society, in Massachusetts, had its attention invited to it by one of its members, and a quantity of the tincture was prepared by him and distributed among them for trial. Since that time they have been in the constant use of it, with results which they deem very important. Much valuable testimony has accumulated upon the pages of their note-books, proving conclusively, to their minds, its reliability as an ARTERIAL SEDATIVE in most inflammatory affections. In March, 1858, the Society appointed the writers of this article a committee to bring this remedial agent to the direct attention of the Massachusetts Medical Society by distributing a quantity of the tincture among its Fellows. Accordingly, they prepared and presented a bottle of the tincture to each member present at the annual meeting in May last. Accompanying each bottle was a brief circular, containing certain leading facts derived from the experience of the District Society. For additional testimony reference was made to the cases which make up the most important part of this paper. Aware that new remedies, brought forward with no sufficient guarantee of their merits, are received by the profession with a degree of distrust, they adopted this course, believing that a trial alone was needed to establish the medicine in the confidence of their medical brethren. It is an interesting fact that it has already been subjected to a widely extended and close scrutiny—a scrutiny such as has seldom befallen any other article of the materia medica within the same period of time—and that, too, with results the most pleasing and satisfactory. We question whether there is any one who has given it a fair trial, who does not regard it as worthy of taking its rank among the few therapeutical agents upon which physicians may place the strongest reliance when contending with giant diseases.

Botanical Characters.—VERATRUM VIRIDE, Ait. (V. album, *Michx.*) *American White Hellebore, Indian Poke, Meadow Poke, Itch Weed.*—The American veratrum belongs to the natural order Melanthaceæ. The stem is stout, very leafy, from 2 to 4 feet high; leaves broadly oval, pointed, sheath-clasping, strongly plaited, of a yellowish-green colour, the lower from six inches to a foot long; inflorescence paniculate, panicle pyramidal, the dense spike-like racemes spreading, perianth yellowish green, spreading. Grows somewhat abundantly in swamps, moist meadows, open woods, and along the banks of mountain streamlets, from Canada to Georgia. In New England it begins to send up its leaves early in April, and blossoms the latter part of May, continuing in flower till July. According to Dr. Gray, this species is very closely allied to the V. album, the true *white hellebore,* a native of the mountainous regions of Central and Southern Europe.

Part used.—The officinal part is the root, consisting of a thick, fleshy rhizoma, tunicated above, while the lower part is solid, sending off numerous long white or yellowish-white radicles. These are smaller and whiter than those of the *symplocarpus fœtidus,* by the side of which it very frequently grows.

Physical Properties.—The root, both in the green state and when dried, has a sweetish bitter taste, and produces a burning sensation in the mouth, upon the tongue, in the fauces and throat, together with a sensation of dryness and heat, extending even to the stomach, and continuing for a considerable time. When dried and powdered, it acts as a powerful sternutatory and errhine, causing an abundant flow from the Schneiderian membrane. Applied locally, it is capable of producing irritation, rubefaction, and even vesication of the skin. (Wood, *Therapeutics and Pharmacology.*)

Chemical Composition.—From a careful analysis, Mr. Henry Worthington (*American Journal of Pharmacy,* vol. x. p. 97) found the root of the *V. viride* to contain gum, starch, sugar, bitter extractive, fixed oily matter, colouring matter, gallic acid, an alkaloid substance identical with veratria, lignin, and the salts of lime and potassa. According to Griffith, the veratria exists in the form of a super-gallate. The alkaloid principle is very nearly insoluble in water, more soluble in ether, and entirely soluble in absolute alcohol. This shows that high-proof alcohol should be used in preparing the tincture.

Time of Collecting the Root.—The proper time for collecting the root is late in the fall, after the decay of the leaves and stalk. The Middlesex East District Society, however, have used specimens of tincture prepared from root dug in the fall, and also from that dug in the spring, without discovering any appreciable difference in the strength of the preparations.

Preparation of the Tincture.—The following is the manner in which the tincture, presented by us to the Massachusetts Medical Society, was prepared. The root was dug in the month of April, just as the leaves were beginning to make their appearance. After being thoroughly cleansed by repeated washings, the fleshy portions were sliced into quarters, without separating the radicles from the rhizomas. About a bushel of these cuttings at a time were put into a common flour-barrel, prepared by removing both heads and substituting a diaphragm of coarse cloth, about three and a half inches above the chime. The diaphragm was extended upon a hoop, and this was kept in place in the barrel by resting upon nails projecting through holes made in the staves. The barrel, thus prepared and charged, was placed over the register of a common house furnace, by which means the mass of roots was permeated constantly by a current of heated air. At the end of about twenty-four hours they became sufficiently dry, and were replaced by a fresh lot. The comminution was effected by breaking up the thick pieces with a pestle and mortar, and then passing the whole through a small coffee mill. Pulverization as fine as this, however, is not necessary. The ground root was then macerated a few days in 94.1 per cent.—common burning fluid—alcohol. It was the intention to employ eight ounces of the dried root to each pint of the menstruum, but it was found that eight ounces of the ground veratrum could not even be wet with a pint of alcohol. Consequently the proportion was reduced to about four ounces to the pint. We believe that the tincture thus produced is sufficiently strong for ordinary use. A greater strength could easily be secured by evaporation, if desired. After maceration, a portion of the tincture was displaced by 94.1 per cent. alcohol one part, and water one part. Additional liquid was obtained by subjecting the wet mass to strong pressure under a powerful screw. By these means there resulted from twenty pounds of dried root about ten beer gallons of tincture.

The preparation thus obtained possesses the physical properties of the article heretofore used by the Society, and upon trial was found to produce the same therapeutical results.

Therapeutical Effects.—The veratrum viride was subjected to trial in this Society, in the first place, to ascertain whether the New England plant possessed the properties ascribed to that growing in the Middle and Southern States. The result showed very conclusively that it is not at all inferior to that growing in warmer regions, while there is some reason to believe it is even stronger.

It is as an *arterial sedative* that we have employed this agent. Although possessing great power and virtue, it is by no means a specific, nor will it cure, or even benefit every disease to which the human frame is subject. Indeed there could be no surer way of bringing it into disrepute and neglect, than by claiming *too much* for it. We have derived satisfactory results from its use externally as well as internally, but we wish this one idea to be kept distinctly before the mind, that the good resulting from its use is essentially due to its sedative power over the circulatory and nervous systems. In respect to the particular diseases in the treatment of which we have found the veratrum an invaluable agent, the reader is referred to the cases which follow, being from notes recorded at the bedside of the patients during the daily visits of their medical attendants.

Dose.—The dose of the tincture thus prepared, and as we employ it, is as follows: For infants, ½ to 2 drops; children, 2 to 5 drops; adults, 3 to 10 drops—every two hours, or *pro re natâ.* When the characteristic effect is not produced upon the pulse, and nausea, vomiting or diaphoresis do not supervene, the dose may be cautiously increased, while the effect is carefully watched. If either of the results last mentioned are secured, a diminution of the dose, or a temporary suspension of its use, would be proper.

General Remarks.—The tincture of the veratrum viride has given great satisfaction to those who have fairly made trial of it. Were it not our design to confine ourselves to the testimony of our own Society, we could add the names of many men, eminent among the physicians of our country, who have employed it with the most beneficial and gratifying results. From its use by the members of the Middlesex East District Society, we derive three important conclusions, which we desire strongly to impress upon the minds of all who may read this article.

It is *reliable.* As an ARTERIAL SEDATIVE, the Society has found it more certain than any other medicine of the class. In some cases, however, from idiosyncrasy or other cause existing in the patient, the dose must be pushed beyond the directions given, both as to quantity and frequency.

It is *safe.* The first indication of a sufficiently full use being nausea and diaphoresis, one or both; these effects show when it has been carried sufficiently far, and a diminution of the dose, or a suspension of the medicine is temporarily demanded.

It is not a *specific*, as was claimed by those who brought it forward several years ago, and even by some, recently. All that we claim for it is, that it is an arterial sedative of great power and reliability.

A minor, though important consideration in connection with this medicine, is the fact that it grows abundantly in all parts of the country, rendering it easy for every practitioner to prepare the tincture for himself. This will obviate the necessity of paying an exorbitant price for it, under the pretence of its being a new remedy.

From the well known drastic action of the veratrum album, it was presumed that the American veratrum possessed similar cathartic properties. But the reported experience of almost all who have tested the action of this medicine, goes to establish the fact that it *very seldom, if ever purges.*

Literature of the V. Viride.—For the convenience of those who may wish to examine what has been written respecting this plant, we subjoin the following references. This is by no means a complete list, however, and we would gladly increase it, had we the references within our reach.

Kalm's Travels; Thatcher's Dispensatory, p. 360, as V. album; *Bigelow's Med. Bot.*, ii. 121; *Rafinesque's Med. Flora*, ii. 273; Osgood, *Am. Journ. Med. Sci.*, xvi. 196; *Am. Journ. Pharm.*, vii. 202; ix. 181, and x. 89; Griffith, *Med. Bot.*, 643; C. A. Lee, *Cat. Med. Pl. N. Y.*, 58; Wood and Bache, *U. S. Dispen.*, 734; Wood, *Therap. and Pharmacol.*, ii. 152; *Trans. Am. Med. Assoc.*, ii. 837; v. 890; Dunglison, *Therap. and Mat. Med.*, ii. 195; Ellis, *Med. Form.*, 39; Pereira, *Mat. Med.*, ii. 103; *Boston Med. and Surg. Journ.*, lvi. 509; Dewey, *Herb. Pl. Mass.*, 205, etc., *passim.*

The succeeding portion of this paper embraces the evidence which the Middlesex East District Society offers in favour of the veratrum viride as an arterial sedative. It has been divided into general and special.

General Evidence.—WILLIAM INGALLS, M. D., of Winchester, thus writes: In functional and organic disease of the heart, in measles, scarlatina, pneumonia, typhoid fever, and other diseases and conditions of the system, attended by high arterial action, I have found the veratrum viride most reliable in combating that particular symptom, and it need hardly be added, that the headache, restlessness, and other attendants upon an excited circulation will, almost always, yield with that. In a great number of instances I have given it, intentionally, in repeated doses until it has produced vomiting, both in children and adults, and in no one instance has any alarming effect been produced by it. I always inform the nurse or attendant what effects may be expected from its administration, and order them to lessen or increase according to circumstances; this I mention because some have said that this medicine needs much watching, and one in full practice cannot give it. It is true that it has had most vigilant watching from the gentlemen of this Society, and they are well repaid for bestowing it. But let me ask if we ought not to watch the effects, as narrowly as possible, of all the medicines we give and the remedies we employ? Have we indeed learned everything about the action and effects of those agents we most habitually employ?

BENJAMIN CUTTER, M. D., of Woburn, remarks: During the year and a half past I have used the veratrum many scores of times, in various diseases, by itself, and in conjunction with other remedies, and I am ready to acknowledge my satisfaction with its medicinal powers in general, and to admit that the longer I use it the better I am pleased with it. Its efficacy I have found more marked in some diseases than in others. Thus, its controlling power is most manifest in inflammatory affections of the chest and of the uterus, and in febrile excitements attended with headache. Many of these complaints can be quieted down and removed entirely by the use of this medicine alone in a very short period of time.

I have used the tincture diluted with two parts of water as an external discutient application in many cases of inflammation of the skin and areolar tissue, and of the mammary glands, with very satisfactory results.

I have rarely seen any unpleasant, certainly no dangerous, symptoms from its use, and think that it is not cumulative in its effects so as to need the close watching that digitalis requires.

If the dose is too large, besides the slowness of the pulse always found, there will be nausea or vomiting and sweating.

Should there be too much depression by an overdose, it can be speedily reieved by alcoholic stimulants or opi um.

Should it be thought necessary to give a full dose of half a fluidrachm in acute rheumatism to an adult at once, it can be done with perfect safety; at least, I have so used it.

Scarlatina appears to be less controlled by the veratrum than any other disease in which I have employed it. But still it is not without value in the treatment of this disorder, for which its arterial sedative quality would seem to render it peculiarly adapted.

Canker spots upon the tongue and inside the cheeks are sometimes observed in connection with the use of the veratrum, and have been ascribed to its administration. More observations are required to establish this supposition, to which the attention of practitioners is thus directed.

Cataplasms, in which varied amounts of the pounded root of the veratrum were incorporated, are convenient applications to inflamed feet and legs, and were favourite prescriptions of my medical teacher, in such cases, thirty years ago.

ALONZO CHAPIN, M. D., of Winchester, writes, March, 1858: Since the attention of this society was first called to the veratrum viride, some year and a half ago, I have made very constant and frequent use of it in my practice, prescribing it in almost all cases where there was undue arterial excitement, and have at length come to rely upon it as quite indispensable. In cerebral, thoracic, abdominal, and inflammatory diseases generally, causing increased arterial action, the *veratrum viride* has enabled me to subdue and almost control it at will. I have considered it of special value in lowering the pulse where excessive muscular and nervous prostration forbade venous depletion.

In some cases where thoracic inflammation supervened upon typhoid fever, it was of peculiar service. So far as I have taken notes of its effects, I find them quite in harmony with the notices published in the medical journals.

I frequently found the pulse reduced forty to sixty beats a minute in the course of twelve to eighteen hours. Tilden's extract and the saturated tincture have both been used by me, and I have seen no perceptible difference in their effects. I have usually given from three to eight drops once in three hours, sometimes alone, and frequently combined with other remedies.

RICHARD L. HODGDON, M. D., of West Cambridge, writes: I have found the frequency of the pulse diminished by the veratrum viride whenever nausea is induced, *except in cases of cerebral disease.* I have used it in pneumonia, pleuritis, erysipelas, and scarlatina. I employ the concentrated tincture prepared by Keith & Co., of New York. In fact, the veratrum in my practice has almost displaced the use of the tart. ant. et potas. The dose I prescribe is one to one and a half drop for a child of a year or less; for an adult, five drops repeated every two, three, or four hours as required.

HORACE P. WAKEFIELD, M. D., of Reading, states that he has used the veratrum viride as an arterial sedative, and that he has found it a reliable article, unless he was deceived by a series of remarkable coincidences. In every case, he has found the pulse to come down. He deems the veratrum viride the most powerful arterial sedative with which he is acquainted; far superior, in his experience, to digitalis.

TRUMAN RICKARD, M. D., of Woburn, testifies: I have used the veratrum viride in many cases of which I kept no notes, with results exceedingly satisfactory. In a few cases, when I began to use the article, I was disappointed in the results, as it did not come up to my expectations. But I am now satisfied that the cause of failure was the smallness of the doses. Of its value in controlling arterial excitement, there can be no question.

Samuel A. Toothaker, M. D., of Wilmington, writes: I have made trial of the veratrum to some extent, but not having taken notes, am unable to give the exact items. In scarlatina and typhus, it has failed to reduce the pulse, but a rapid diminution of frequency has followed its use in pneumonia and other inflammatory diseases.

Ephraim Cutter, M. D., of Woburn, writes: I am satisfied that the veratrum viride is an arterial sedative, having used it as many, if not more times than any other medicine. I do not rely upon it to the exclusion of other well-known and tried agents, but would look to it first.

Special Evidence.—In functional and organic diseases of the heart, the veratrum viride has been used with much satisfaction.

Case I.—*Palpitation.* (Reported by Truman Rickard, M. D.)—Miss L. R., aged 51, had been troubled with palpitation for several days. Proposed to her to try veratrum viride. She laughed at the idea, but consented to take it. Gave her six drops. In an hour or two she said she was really better. The tincture of veratrum viride was continued in doses of gtt. iv, three times daily, for two or three days with marked benefit. The palpitation was connected with spinal irritation.

Case II.—*Palpitation.* (Reported by Ephraim Cutter, M. D.)—1857, *Dec.* 18. Mr. A. S., lithographer, 44 years of age, has had palpitation for some time. Latterly, it has increased. The first sound of the heart, after exertion was prolonged, and was heard loudest toward the apex. The præcordial dulness was embraced within the third rib, a line half an inch inside of left nipple and the middle of sternum. Pulse 72. He was put upon the tincture of veratrum viride gtt. vj, thrice daily, besides stated exercise and Hoffmann's anodyne, *pro re natâ.* On the 26th, he reported considerable relief.

Case III.—(Reported by the same.)—Miss K., a pale, sickly girl of 18, by the use of the tincture of veratrum viride in the usual doses, was relieved from the annoyance of palpitation and dyspnœa on exertion.

Case IV.—(Reported by the same.)—A married woman, of nervous temperament, 22 years of age, with a phthisical tendency, complained of dyspnœa, with pain in the præcordium and left hand on exertion. She used the veratrum with benefit. Tonics also were employed.

Case V.—(Reported by the same.)—*June* 25, 1857. P. E——, an adult, suffered from palpitation. Præcordial dulness extended into the epigastrium. Cardiac sounds somewhat those of the "tobacco heart." Sole treatment, tincture of veratrum viride gtt. vj thrice daily.

July 18. Thought the medicine benefited him, and applied for another ounce.

The veratrum sometimes disappoints, even when pushed.

Case VI.—(Reported by the same.)—George Garrison, a currier, 20 years of age, May 15, 1858, complained of pain in chest, which shifted about to different quarters, attended besides with slight nausea. Face was flushed. Respiratory murmur pure. Heart's impulse forcible. There were no changed or abnormal sounds over præcordium, that I could detect. Pulse 120. Gave tincture of veratrum viride, gtt. x, thrice daily.

June 5. Soreness over præcordium. Heart's impulse less forcible. Pulse 120, although gtt. xx instead of gtt. x were taken. Complains of intestinal gas. Ordered tincture of veratrum viride to be continued, an emplastr. belladonnæ to præcordium, and pulv. ipecac. gr. ij, and pulv. rhei gr. iij, *pro re natâ.*

9*th.* Pulse 96. Relinquished work; feels better; less troubled with the gas; cardiac disturbance continues. Has taken between twenty and thirty drops of the tincture of veratrum viride thrice daily, he states, without effect.

The following formula was adopted: ℞.—Tinct. digitalis, tinct. verat. viride, āā gtt. x, *ter in die.*

The patient reappeared in August, improved.

Case VII.—*Organic Disease of the Heart.* (Reported by W. Ingalls, M. D.)—A lady, 22 years of age, with florid cheeks, fair complexion, auburn hair, light-blue eyes, has been under my care for a long time, with the following symptoms: Tumultuousness, palpitation of the heart, tightness across the chest, dyspnœa, syncope, flatulency, disagreeable and sometimes horrible dreams, blueness of lips. The symptoms named have not been present all at once. The normal sounds of the heart are interrupted, at various intervals, by an irregularity which lasts for the space of about three beats, a hesitation, and then a sound which may be represented by the word *thurrurdup.*

In January, 1857, I saw the patient while suffering with one of her paroxysms, her pulse being 125, and the interruption mentioned above occurring at every 14 beats. I prescribed tincture of veratrum viride gtt. x, to be repeated in two hours, provided there was no relief. In ten hours I found the pulse 85, the interruption at every 40 beats. The first dose only had been taken, for so great a change in her feelings was experienced that she preferred to await my next visit. I myself was alarmed at finding so great a reduction of the pulse in so short a time.

Within a few days, another paroxysm coming on, she took five drops of the tincture with good effect, the pulse being 96, and coming down to 78, the interruptions improving from 18 beats to 58. In a short time it was found that the susceptibility of the patient was so great that doses varying from three drops to one, taken on the approach of a paroxysm of dyspnœa or fainting, would produce the effect of lessening, and, in some instances, of almost entirely overcoming it, as to severity and duration. At this writing the heart beats with great regularity for the most part, the troublesome symptoms supervening but rarely.

This case was one of the first in which I made use of the veratrum viride.

Case VIII.—*Inflammation of Fauces, with high Febrile Action.* (Reported by Truman Rickard, M. D.)—April 17, 1858, was called in the morning to visit Alice T——, aged about 4 years. Appearance as follows: Fever high; cheeks purple; pulse 140; respiration nasal and noisy; cough very troublesome. Directed tincture of veratrum viride, gtt. iv, every two hours, and pepper-sauce (*capsicum annuum*, var. γ.), diluted and sweetened, for the throat. 6½ P. M. Pulse 110; skin moist.

18*th.* Febrile paroxysm returned; pulse rose to 140. Directed tincture of veratrum viride, gtt. v, every two hours; pepper-sauce as before. Pulse fell speedily.

20*th.* Better; skin moist; respiration 30; breathing less noisy. Continued veratrum viride, less frequently, and applied croton oil to the upper portion of the chest. Recovered rapidly.

Case IX.—*Puerperal Fever.* (Reported by Benjamin Cutter, M. D.)—J. G——'s wife was confined April 2, 1858, with her first child, and had been doing well for ten days. April 12, was called to her, and found pulse 130; headache and pain in the bowels. Gave ol. ricini, so as to produce three dejections. Ordered besides gtt. x of tinct. verat. viride every three hours. Took four doses, with marked benefit.

April 13. Pulse 130; headache; uterus tender on pressure; skin moist and warm; some nausea. Continued the veratrum viride every two hours.

14*th.* Pulse 100; vomited occasionally.

Had Seidlitz powders and the veratrum viride irregularly for the next two days.

On April 17 a return of severe headache was met by gtt. xij of tincture of veratrum viride *every hour*, till five doses were taken, with entire relief. Afterwards the medicine was occasionally taken, the pulse being steadily kept down by it.

20*th.* Pulse 70, and the patient convalescent.

Case X.—(Reported by Ephraim Cutter, M. D.)—Mrs. E. E. T—— was confined April 28, 1858. Had a chill on the 29th, followed by fever. She was treated by my father, Dr. B. Cutter, with calomel and opium, neutral mixture, and the tincture of veratrum viride, besides leeches to the os uteri, until May 3, when, on leaving home, the case fell to the reporter. At 10½ A. M. pulse 120, and headache. Ordered tincture of veratrum viride, gtt. vj, every hour. Two doses were taken, when vomiting ensued, with profuse sweats and some uterine hemorrhage. At 4 P. M. the pulse was 72. After this the tincture of veratrum viride was continued as a febrifuge, *pro re natâ*, and almost every dose was followed by sweating, besides reduction of the pulse. It seemed possible to keep the pulse at any point desired. She is now (May

15) convalescent. It should be remarked that Mrs. T—— was not susceptible to opiates.

CASE XI.—(Reported by WILLIAM INGALLS, M. D.)—In a case of inflammation, and subsequent sloughing of the vagina after delivery, the fever was very high, and the tincture of veratrum viride was given in doses of from three drops to ten, but could not be tolerated; every dose created great nausea, without attendant reduction of the frequency of the pulse, and after twelve hours was refused by the patient.

CASE XII.—*Pneumonitis.* (Reported by BENJAMIN CUTTER, M. D.)—A. H——, æt. 40. Seen April 1, 1858. Had been sick since 28th ult. Taken with chills, general soreness, and pain in right chest. His pulse was 110, and respiration 25. Gave powders of submur. hydrarg., tart. ant. and opium. Twelve hours afterwards I found him with pulse 132, respiration 22, complexion very sallow, expectorating bloody sputa. Bled him 24 ounces. Continued the powders, and gave tincture of veratrum viride, gtt. x, every two hours.

April 3. Had vomited freely for two or three hours. Pulse 80, respiration 20. Continue veratrum viride.

4*th.* Veratrum viride taken irregularly. Pulse 96, respiration 20. Ordered veratrum viride, gtt. x, every two hours.

5*th.* Pulse 60.

6*th.* Pulse 72; some canker on tongue. Take veratrum viride, gtt. x, every eight hours.

7*th.* Pulse 74; hungry. An egg for breakfast.

10*th.* Pulse 76; down stairs; eats beans.

11*th.* Out doors; convalescent, with rapid recovery.

A blister was applied the fourth day, and the bloody sputa occurred almost daily until after leaving his chamber.

CASE XIII.—(Reported by the same.)—April 12, 1858. P. D——'s daughter, 2 years old, with pneumonia in the second stage. Sick since the 8th. Pulse 170, respiration 80 per minute; panting, sometimes screeching; no sleep; mother a poor nurse. Ordered a wet towel to be kept constantly about the chest, and full doses of tartarized antimony and the veratrum viride every hour, as much as could be borne. These were continued till the child came fully under the influence of the veratrum viride, and then dropped.

13*th.* In the morning, pulse 130, respiration 56; screeches sometimes; pants. Veratrum viride continued, in smaller doses.

14*th.* Easier.

15*th.* Pulse 130, respiration 40; child bright.

After this, the little patient improved and recovered.

CASE XIV.—(Reported by R. L. HODGDON, M. D.)—January 5, 1858. A child, 4½ years old, was found with a frequent dry cough, hot skin, rapid respiration, furred tongue, and a pulse of 140. ℞.—Calomel gr. iij; follow with ol. ricini. ℞.—Tinct. verat. vir. gtt. iij, every three hours.

6th. Copious dejection; vomiting this morning; pulse 84 (a reduction of 56); cough frequent; respiration slower.

7th. Pulse 120. Has not taken veratrum viride since last evening. Resume veratrum viride.

8th. Has vomited; pulse 60 (reduced 60). Ordered tinct. veratrum viride gtt. ij every two hours.

9th. Pulse 80. Continue veratrum viride.

10th. Pulse 80. Veratrum viride continued. From this date the convalescence was rapid. There was no medicine exhibited after the cathartic but the veratrum viride.

Case XV.—(Reported by the same.)—Mr. C——, aged 44, March 13, 1858, has great pain in right side, with frequent cough, dyspnœa, and a pulse of 120. He has taken cathartics. Ordered leeches to side, and tincture of veratrum viride gtt. v, with $\frac{1}{16}$ gr. of sulphate of morphia, every three hours.

March 14. Pulse 80; pain less.

15th, A. M. Pulse 100; slept during the night, and omitted the veratrum viride. Resume veratrum viride.

15th, P. M. Pulse 60; some nausea; no vomiting. Ordered tincture of veratrum viride, gtt. iij, every four hours, with Dover's powder at night.

16th. Pulse 72. Omit veratrum viride.

Case XVI.—(Reported by the same.)—April 19, 1858. Mrs. H——, aged 84, while recovering from the effects of extensive suppuration in right arm, sat at an open window yesterday half an hour, and shortly afterwards had a chill, with sneezing and coughing. To-day she has an urgent cough, a pulse of 104, and crepitus in lowest lateral third of chest. ℞. Tinct. verat. viride gtt. iij; sulph. morphiæ gr. $\frac{1}{16}$; liq. ammon. acet. f℥ss.—M. Take every three hours.

20th. Pulse 82; troublesome cough; rusty sputa. Omit veratrum viride.

21st. Pulse 94. Resume veratrum viride as before.

22d. Pulse 76. Take veratrum viride every four hours.

25th. Had diarrhœa, after which the cough suddenly ceased.

Case XVII.—(Reported by Truman Rickard, M. D.)—Martha C——, aged 5½ months, was seized with inflammation of the lungs, Feb. 26, 1858. I saw her in the afternoon of the 27th. With the characteristic symptoms of pneumonia, I found her pulse 184. Ordered fomentations to the affected region, draughts to the feet, and tincture of veratrum viride, gtt. iss, every two hours.

February 28, 10 A. M. Better in all respects; pulse 125. Continue same treatment during the day, reducing the dose of the verat. viride to *one* drop.

March 1. Doing well. Directed an expectorant mixture, and tincture of veratrum viride, gtt. j, every four hours; more frequently if fever comes on.

2d. Pulse rose yesterday to 150, but a return to the veratrum viride, gtt. j every hour, brought it down, and it has not risen so high since. Continue expectorants and veratrum viride less and less frequently. She made a speedy and good recovery.

Case XVIII.—(Reported by the same.)—May 22, 1858. The subject of the last case had another attack. Saw her at 7½ o'clock A. M. Found her as follows: Face pale; eyes dull; head hot; pulse 150; respiration 60; cough troublesome; hoarseness; dulness of right lung on percussion, and an abundant mucous rale over the right lung. Directed the head to be bathed freely with cold water, and prescribed tincture of veratrum viride, gtt. iss, every two hours.

23*d*, A. M. Pulse 120; brighter; head cooler. Continue verat. viride. P. M. Pulse 150; respiration 90; cough; a little hoarse; also crepitus and diminished resonance on percussion at base of left lung. Directed tincture of veratrum viride, gtt. ij, every two hours; calomel ¼ gr. and pulv. ipecac. ¼ gr. every two hours; cold water dressing to the throat.

24*th*, 10 A. M. Pulse 72 (a reduction of 78); face pale; skin cool and moist; respiration 57; no urine for twenty-four hours past. Directed cream of tartar water, and omitted veratrum viride till next visit. Apply turpentine stupe to back.

25*th*. Pulse 120; respiration 60; cough loose; skin cool and moist. Apply stupe to chest, and use expectorant mixture, with occasional doses of the verat. viride.

26*th*. Pulse 90; quiet; rested well during the night; respiration 48; skin cool and moist. Omit veratrum viride; continue stupe once daily to back, or front of chest; also the expectorant mixture. From this time she went on well, and made a good recovery.

Case XIX.—(Reported by Howland Holmes, M. D., of Lexington.)—In one case of pneumonia, patient an adult, pulse 84, I gave gtt. iij tinct. of veratrum viride every four hours. At my next visit, twenty-four hours after, found patient's pulse 74. Directed tincture to be given every two hours, and nine hours after I found the pulse 62. Nausea or other unpleasant effects were not induced.

Case XX.—Dr. J. D. Mansfield, of South Reading, relates a case of pneumonia of left lung in a young man of 20, of scrofulous diathesis, in which the tincture of veratrum viride seemed rather to *increase* than *diminish* the pulse. The case was fatal on the ninth day of treatment and thirteenth of disease. There was other treatment.

Case XXI.—*Acute Rheumatism.* (Reported by Alonzo Chapin, M. D.)—May 20, 1858, P. M., I was called to a young man about eighteen years of age, with symptoms simulating acute pleuritis in the inferior portion of the right thorax. Prescribed a sinapism to the part; ten grains of Dover's powder at bedtime, and tinct. veratrum viride (Tilden's extract) gtt. viij every two hours.

21*st*. A. M. Passed a restless night. Symptoms same as the night before;

pulse at 100. Continue the veratrum viride. P. M. Pain much diminished; vomiting; pulse 90. Suspend all medicine for the night.

22*d.* A. M. Pulse again at 100. Pain had entirely left the chest, but both knees and ankles were swollen and painful. Continue veratrum viride gtt. viij, with gtt. xx of nitric ether, every three hours.

23*d.* Pulse 72. Pain and tumefaction less. Continue veratrum viride.

24*th.* Much improved; had slept well the previous night; tongue cleaning; urine, which had been highly lateritious, improved; appetite returning.

25*th.* Veratrum viride has been given occasionally the past 24 hours. Pulse now 72. Pain severe in the joints of toes, elsewhere has left him entirely, and there is an appearance of speedy recovery. The patient had on a former occasion suffered much from hypertrophy of the heart, and there was difficulty in controlling the excessive action. During the present instance, the heart became at one time tumultuous when the veratrum was omitted. Its resumption served very soon to restore quiet. I consider the veratrum as possessing additional value in this case on account of the cardiac complication.

It will be seen, too, that my first view of the case was changed by its after symptoms, and that what at first seemed pleuritis, proved to be acute rheumatism. Its course has thus far been more rapid than usual, and it now promises a more speedy termination than is common.

CASE XXII.—(Reported by EPHRAIM CUTTER, M. D.)—Mr. S. S. M., in bed with an attack of acute rheumatism was treated with phosphate of ammonia and tincture of colchicum seeds—grs. xv of the former and f℥ss of the latter every four hours. During the interval, he took gtt. vj of the tinct. veratrum viride. The pulse soon fell from 120 to 96. On account of nausea it was discontinued.

CASE XXIII.—(Reported by WILLIAM INGALLS, M. D.)—A young man, 19 years of age, of a naturally lax texture and white skin, applied for advice on the 12th of May, 1858. Had not felt very well for several days; could hardly tell what was the trouble; indisposed to move about; not much appetite; bowels irregular; skin cool and of a yellowish cast; tongue coated; pulse 60, soft, and full. Gave a cathartic containing calomel.

13*th.* Reported himself better.

14*th.* 4½ A. M. Found him in bed suffering intense pain in the right foot, which is somewhat swollen, and of a pink hue on the instep and the region of inner ankle. Had been thus for four or five hours. Pulse 106, full and rather hard; tongue coated; skin hot and dry. Learned that on the day previous, which was a cold, drizzly, northeasterly day, the patient was out of doors a good deal, and was otherwise imprudent. *Diagnosis.*—Acute rheumatism. *Treatment.*—Tinct. veratrum viride gtt. v every two hours, and cold water dressing to foot.

In the afternoon, finding the left foot was becoming inflamed, and that there was no amelioration of any symptom, I ordered tinct. veratrum viride gtt. x every two hours and water dressings. Shortly after the third dose, vomiting commenced and continued nearly three-quarters of an hour. This was at 11 P. M. Pulse 94, full and softer. He took no medicine until the next morning, which was the

15*th.* 8 A. M. Patient expressed himself as having been wonderfully free from pain for the last eight or nine hours, as compared with the twenty-four previous—still he could not be turned over in bed without suffering agony. Pains now attacking knees; pulse 102. Again ordered the ten drop dose to be given as before. After the fourth dose, vomiting took place.

In the evening, pulse 86; redness subsiding in the feet; pains very much less.

From Sunday, May 16th, to the morning of Thursday, May 20th, the hips slightly, the shoulders, elbows, and wrists were successively attacked, beginning on the right. He took, during this time, tinct. veratrum viride gtt. v every two hours, commencing on Sunday morning, and prolonging the interval between the doses in such a manner that on Thursday morning it was omitted. On Friday he was dressed, and with a little assistance came down stairs where I found him free from pain, redness, and swelling. Appetite good; pulse 72. He has been well since.

Case XXIV.—*Pleuritis.*—Alonzo Chapin, M.D., in March, 1858, thus writes: Last fall I attended a man with typhoid fever, who, after an illness of several weeks, had convalesced so far as to get out of doors. He was suddenly seized with the symptoms of acute pleuritis, and having been so prostrated by the previous fever that general bleeding was out of the question, and leeching was to be avoided if possible, I relied upon the veratrum viride, giving him eight drops of Tilden's extract every three hours, to control the circulation, and found it entirely satisfactory. It rapidly subdued the excited pulse, and kept it in a good degree of subjection, better than could have been expected from any other article. Adjuncts were used as indicated, and the patient seemed to bear tonics and stimulants earlier and more freely when accompanied with the veratrum than in the previous convalescence. He recovered well, and, as far as I can detect, is free from the adhesions and effusions incident to such attacks.

Case XXV.—(Reported by J. D. Mansfield, M. D.)—Miss S. L., aged 18, was suffering with the rational signs of a severe inflammation of the pleura. Under the use of the tartrate of antimony and potassa, nitrate of potassa, tinct. digitalis and hot fomentations, with pulv. ipecac. subsequently, in four days these symptoms abated. On the fifth day from seizure, a relapse. Gave tinct. veratrum viride gtt. vj once in four hours. The next day pulse was reduced from 128 to 86. Breathing quiet; skin moister; pain gone.

Case XXVI.—(Reported by Moses Parker, M. D., of Melrose.)—The patient was a man about 40 years of age, of a nervous temperament. He was suffering from pleuritic effusion. There was present a constant cough; a pulse of 90 (it had been so several *days*, and I think *weeks*); debility; anorexia, and an inclination to low spirits. He had used the wet sheet so as still farther to reduce his vitality. Directed gtt. iv of Tilden's extract of veratrum viride—to be repeated in four hours, should the pulse not become reduced. His wife misunderstood the directions and repeated the medicine unnecessarily. The second dose acted with power and produced great prostration. Found the pulse 40 beats lower than at the previous visit, although he had begun to rally. The symptoms of depression yielded readily to brandy. At the end of an hour he was comfortable, and the pulse at the normal beat.

The patient was very much alarmed, and refused to take any more veratrum. The points of interest in this case are the great and speedy reduction of the pulse—he took but two doses—and the prompt reaction under the use of an alcoholic stimulant.

CASE XXVII.—*Measles.* (Reported by TRUMAN RICKARD, M. D.)—Mrs. M., a wet nurse, sick with measles, I visited April 25, 1858, and found her as follows: Pulse 120; head very hot, and aching very badly over the left eye; restlessness and thirst; eruption out well upon the face and neck, but not developed upon the trunk. Directed a warm vapour bath to be applied in bed, and tinct. veratrum viride gtt. vj every two hours. Expected to find it necessary to apply leeches to the left temple.

26*th.* Pulse 104; headache gone; eruption coming out upon the body finely; much better. She took but two doses of the veratrum viride, as it produced vomiting.

27*th.* Needs no farther attendance.

CASE XXVIII.—(Reported by same).—J. C. R., aged 6½ years, had a prompt and well developed eruption. The febrile action was high. Pulse 140; restless. Gave one dose of tinct. veratrum viride to see what effect it would produce upon the heat and restlessness. In half an hour the pulse fell *eight* beats; the surface became cooler, and the child much more comfortable.

I have come to the conclusion, after repeated trials of the veratrum viride in measles, that a dose given occasionally moderates the intensity of the febrile action, promotes the comfort of the patient and certainly does not retard the eruption.

CASE XXIX.—(Reported by EPHRAIM CUTTER, M. D.)—A boy 8 years old, who went out too soon after having had measles, experienced a chill, which was followed by headache and fever; the pulse being 120.

The veratrum was exhibited in three drop doses every hour for four or five times. No vomiting ensued. He became relieved of the cephalalgia, and the next day the pulse was found to be 60. The only other medicine was a simple cough mixture.

Case XXX.—*Bronchitis.* (Reported by Benjamin Cutter, M.D.)—C. R., aged 5½ years, May 20, 1858, has been sick four days with cough and cold. Pulse 130; respiration 40. Gave tinct. veratrum viride gtt. ij every hour.

21*st.* Pulse 112; respiration 45; chest resonant. Veratrum viride to be doubled till nausea.

22*d.* Pulse 80; respiration 40; did not sleep well; urinates freely.

23*d.* Pulse 92; respiration 25. Down stairs, being dressed; bright; better.

Case XXXI.—*Influenza.* (Reported by Truman Rickard, M. D.)—This case shows the prompt effect of the veratrum. Mrs. E. R. R. was attacked with influenza March 14, 1858. At 8 o'clock P. M., fever high; headache severe; pulse 112, and increasing up to present time. Gave tinct. veratrum viride gtt. viij. *In one hour* the pulse fell to 100. At bedtime repeated the dose. Patient much better in the morning. No other treatment was adopted.

Case XXXII.—*Infantile Remittent Fever, complicated with Vascular Irritation of the Encephalon.* (Reported by Truman Rickard, M. D.)—Sarah P——, aged three and one-half years, was taken sick on Monday morning, February 1, 1858. She was well, apparently, the preceding day, and slept well the night before the attack. When she awoke in the morning she complained of feeling sick, and did not wish to get up. Simple domestic remedies were employed during the day, and on the morning of Tuesday her parents thought her better. It soon became apparent to them, however, that there was in reality no improvement, but that she was actually getting worse, and I was asked to see her at 4½ o'clock P. M. Her condition at the time of my visit was as follows: pulse 188, and irregular; respiration 48; cheeks flushed and almost purple from the intensity of the febrile action; head hot; tongue covered with a thin, yellowish-white coating; constant drowsiness; the pupils somewhat dilated and vacillating; eyelids partially closed; convulsive startings of the upper and lower extremities; and a strongly-marked fear of falling when taken up; respiratory murmur clear throughout both lungs; had passed no urine during the day. She perspired freely on Monday, her mother informed me, but at this time the skin was dry and hot. She lay, the most of the time, in a state of semi-unconsciousness, and very seldom responded to the questions proposed by her parents and attendants. Her symptoms clearly indicated that the brain was suffering from the intense vascular excitement. Regarding the case as an excellent one for a trial of the veratrum viride, I decided upon that as the principal remedial agent at this time.

Treatment.—Feb. 2. Directed tincture of veratrum viride gtt. v, every two hours; cloths wet in cold water to be applied to the head; mild sinapisms to the feet; as perfect quiet as possible, and the room to be darkened. The first dose of the veratrum viride was administered at 5 o'clock P. M. At 5 P. M. pulse 188; at 9 P. M., 134; at 11 P. M., 118.

3d. At 1 A. M. pulse 116; at 5½ A. M. 136; at 8½ A. M. 144; at 10 A. M. 145. Febrile paroxysm returning. There is a constant hacking cough; respiration nasal; fauces red; left cheek very much flushed; right cheek pale; general heat of surface not so great as yesterday; pulse a little hard. Gave a powder consisting of calomel, gr. iij, and cream of tartar, gr. iv, to move the bowels. Directed a tablespoonful of water, sweetened and acidulated with cream of tartar, to be given every two hours; continue veratrum viride and other adjuvants as yesterday.

At 5 P. M. pulse 145. The calomel produced three evacuations in the afternoon, and the kidneys responded to the cream of tartar.

At 8½ P. M. pulse 120. Febrile paroxysm subsiding. Directed veratrum viride gtt. iv, every four hours, and a powder consisting of calomel gr. ¼, and ipecac. gr. $\frac{3}{16}$, every four hours. Directed gum water for nourishment. Continue cold cloths to the head and sinapisms to the feet. During the night pulse 120 to 130.

4th. At 10 A. M. pulse 136; at 11 A. M. 142. Febrile paroxysm began to come on in the morning; remittent character of the disease well developed; respiration 40. Continue veratrum viride as yesterday, and a powder consisting of calomel and ipecac. āā gr. ¼ every four hours; continue the drinks and other adjuvants as heretofore. At 7½ P. M. pulse 140; in the night 140 to 134. Directed an enema to be given in the morning.

5th. At 10 A. M. pulse 136. Respiration quiet; tongue moist, with a thin, darkish coloured coat; head cool; intellect clearer. Called for her doll this morning, and, when brought, kissed it. The injection administered in the morning acted promptly, and brought away a large quantity of *muddy* looking fecal matter. The hacking cough continues. Directed pepper sauce diluted and made very sweet, in small quantities for the fauces. Continue veratrum viride and powders as yesterday; continue drinks; omit cold to the head and sinapisms to the feet. Pulse *regular* and soft, remaining at 134 from 2½ to 11 P. M.; respiration 38; fever less during the day than yesterday; head cool; sleep quiet.

6th. At 1 A. M. pulse 130; at 2 A. M. 124; at 3 A. M. 128; at 11 A. M. 128. Getting a little feverish; passed urine freely; tongue moist, darkish coat still continues; intellect clear; first observed a shawl that had been used several days to darken the window behind her couch; wants her playthings; wants to sit up. Continue the veratrum viride as yesterday; omit calomel and ipecac.; is to use the cream of tartar water for drink *ad libitum;* continue the gum water; directed chlorate of potash and bicarbonate of soda, āā gr. j, in solution every four hours; Dover's powder at bedtime to secure sleep. At 9 P. M. pulse 124.

7th. At 10 A. M. pulse 118. Tongue moist, coating thinner; bowels acted several times during the night, passing off green bile; kidneys act freely; respiration 34. There was a slight return of the convulsive motions of the arms during the night, with restlessness; cough troublesome. Directed veratrum viride gtt. iv, every six hours, and Dover's powder and hyd. cum cretâ every six hours; omit the cream tartar water; continue to use the gum water; continue the chlorate of potash and soda.

At 1 P. M. pulse 104; at 4½ P. M. 98; at 9 P. M. 94, and skin moist. Dover's powder at bedtime to secure sleep.

8th. At 10¼ A. M. pulse 99. Rested during the night much better than the previous night. Tongue cleaning; appetite begins to return; is fully conscious, but very weak. Directed small doses of rhubarb and soda three times daily; also veratrum viride gtt. ij, and sweet spirits of nitre gtt. x, every four hours; Dover's powder at bedtime; omit chlorate of potash and soda.

9th. At 11 A. M. pulse 105. Tongue pretty well cleaned; was restless last night; rather more heat; the irritation in the fauces produces a troublesome cough. Directed to employ the pepper sauce and sugar, but not to give drink immediately after its use; continue the veratrum viride and nitre, and rhubarb and soda; Dover's powder at bedtime.

10th. At 10 A. M. pulse 94. Convalescence fairly established; cough much better; fauces better. Continue medicine as yesterday.

11th. At 10 A. M. pulse 96. Going on well. Omit veratrum viride; continue rhubarb and soda; directed citrate of iron, gr. j in solution, three times daily; Dover's powder at bedtime.

12th. At 11 A. M. pulse 95. Throat and cough very much better; rested well last night; strength and appetite improving. Continue medicine as yesterday.

15th. At 2 P. M. pulse 94. Has been doing finely, and gaining strength well. Omit rhubarb and soda; continue iron, and Dover's powder at bedtime if needed. Took leave of patient. She continued to improve, and made a good recovery.

The points of special interest in this case are the suddenness and severity of the attack, the semi-unconsciousness so long continued, and the excellent effect of the veratrum from the time of administering the first dose. Although the quantity given at first was somewhat large for a child of that age, no nausea was produced.

CASE XXXIII.—*Scarlatina.* (Reported by EPHRAIM CUTTER, M. D.)—Ellen McElroy, 2 years and 4 months old, with strawberry tongue, scarlet rash, and a strong pulse of 144, took, March 11, 1858, four drops of the tincture of veratrum viride every two hours. Creasote was exhibited for irritability of stomach, and bitartrate of potassa water for drink. The following day the pulse was 96.

There are some cases over which the veratrum viride has no power. Reference is here made to instances of scarlet fever, two of which have just occurred. Both died. No effects on the heart or stomach were produced by the administration of the tincture in the usual quantity every hour. Probably no medicine would avail in these cases.

CASE XXXIV.—(Reported by W. INGALLS, M. D.)—Oct. 10, 1857. Ella —— 8 years old, a delicate child, with hypertrophy of the heart from infancy, if not from birth, had been "not very well" for three days. The only guide to a diagnosis was a pulse of 110, and a strawberry tongue. The day previous to my visit there was, as described by her mother, an eruption of a red colour upon the neck and arms. The patient is very thin, and the beating of the heart may be heard and felt throughout the chest, and in the erect posture a considerable movement is imparted to the whole frame by the palpitation.

Tincture of veratrum viride, gtt. iv, was prescribed every three hours besides quietude and light nourishment. In a few days there was desquamation of the skin, followed shortly after by anasarca and hematuria. During the course of these sequelæ the tincture of veratrum viride was taken quite constantly, the pulse ranging from 100 to 125, as sure as the influence of the medicine was lost, and being as low as 88 to 94 while under it.

I have not mentioned all the treatment, as it is not necessary for the purposes of this report.

The child recovered and has remained as well as usual ever since, which is now about ten months.

ART. II.—*Account of the Yellow Fever, as it occurred on board the U. S. Frigate "Susquehanna," in March and April,* 1858. By ROBERT T. MACCOUN, M. D., U. S. Navy. (Communicated by W. WHELAN, M. D., Chief Bureau Medicine, U. S. N.)

THE U. S. frigate "Susquehanna," whilst lying at our naval rendezvous at Spezzia, in Sardinia, received orders on the 16th of October, 1857, from the Hon. Secretary of the Navy, to proceed to San Juan de Nicaragua.

Accordingly, on the 22d of the same month, she sailed for the above-named port, touching at Genoa, Madeira, and Key West, *en route.*

She arrived in San Juan early in December, with her officers and crew in a perfectly healthy condition.

About ten days after coming to anchor, intermittent and remittent fevers became prevalent on board. These fevers, which are endemic in the country, are of a mild form, and easily arrested by a few doses of quinine. At first they were almost entirely of the intermittent type, but, as the time of our sojourn lengthened, they gradually assumed the remittent type, becoming more severe, but never fatal.

During this period, gastro-enteritic affections became very common, the slightest imprudence in diet producing cholera morbus or diarrhœa. Scorbutic symptoms also began to manifest themselves, owing to a want of fresh provisions, which could not be procured, either abundantly or of good quality, at that place.

This condition of things continued up to the 20th of March, when the first fatal case of fever occurred. Finding we had a malignant disease among us, the ship was gotten under way, and cruised off and on the port for four days, at the end of which time we came to anchor, outside of the harbour, and sufficiently far from the shore to be out of reach of any malarious influences. Our change of position did not cause the disease to abate; on the contrary, cases were continually occurring, and the sick list rose to thirty in number.

It was now deemed advisable to proceed to a port in the United States, it being evident that the ship was infected with a malarious poison, which could not be eradicated in that climate.

Accordingly, on the 1st of April, we sailed for Pensacola, intending to stop at the Island of Old Providence, in order to procure coals, of which we were short, and supplies of fresh provisions.

The second day out, however, this idea was abandoned, and it was considered more advisable to run for the Island of Jamaica, which could be reached nearly as soon, and where greater facilities would be offered for procuring what we desired.

On the evening of the 5th of April we arrived off Port Royal, Jamaica, in a most lamentable condition. We had one hundred and six officers and men lying dangerously ill of the fever, and a gloom hung over every one, which even our arrival in a hospitable port could not for a moment shake off. As we entered the harbour, we passed near the Admiral's ship, which was brilliantly illuminated, there being a ball on board; and the cries and groans of the sick and dying, that filled our decks, formed a sad contrast to the sounds of music and merry voices, wafted to us from the festival. That night will never be forgotten by any survivor; it was a night of real horrors.

As soon as our ship came to anchor, Admiral Sir Houston Stewart politely sent his flag lieutenant to invite the officers to join in the festivities of the evening. The invitation was of course declined, and the boat returned, bearing a message from the captain, informing the admiral of our melancholy condition.

A short time afterwards Dr. Kinnear, Deputy Medical Inspector, came alongside, bearing the most generous offers of assistance from Admiral Stewart. Permission was given to land all our sick at the Royal Naval Hospital, boats and cots were to be sent to transport them on shore, and the ship was to be coaled and watered, in twenty-four hours, that we might be able to proceed on our homeward voyage, without delay. Several officers left the ball to get everything in readiness, and at six o'clock on the following morning, sixty-three officers and men, sick with the fever, were sent to the hospital; and on the day following twenty-two more, making in all eighty-five cases.

The prompt and generous manner in which Admiral Stewart acted towards us, must elicit the praise and admiration of every one; and the kindness and attention of Dr. Kinnear, and the other medical gentlemen attached to the hospital, cannot be too highly appreciated.[1] On the 8th day of April we left Port Royal for New York.

Previous to our arrival in the former place, water had been daily let into the ship, and was pumped out again, and a large quantity of Burnett's preparation of chloride of zinc, procured at Port Royal, was freely used down the pump wells, in the hold, and sprinkled over the decks, yet the disease continued its march with unabated violence.

The sick list rapidly increased during our passage home, and upon our arrival at quarantine, New York, on the 15th of April, we had fifty patients.

Causes.—San Juan is considered the healthiest port on the unhealthy coast of Central America, nevertheless, every condition exists there for the production of fever.

It is situated in a flat alluvial soil, surrounded by marshes and lagoons, and at the mouth of a fresh water river. During eight or nine months of the year it rains almost incessantly, and even in what is called the dry season, showers are of almost daily occurrence.

The thermometer has a range of from 75° to 90°, with a high dew-point; meats can scarcely be kept over night, without the use of salt, and all kinds of animal and vegetable matter quickly decompose. Arriving about two weeks before the end of the rainy season, we were exposed, during that period, to constant wet weather. For ten days or more the heavens were veiled in black clouds, and the sun was invisible. Everything in the ship was saturated with moisture, even to the bedding; and, although stoves were placed on the berth deck, they only partially corrected this condition.

Our lengthened stay in this hot, damp, and unhealthy climate, gradually debilitated the crew, leaving them with little powers to resist or bear any serious disease.

The Susquehanna was at all times in excellent order, and, as far as the eye could discern, cleanly throughout. But there are parts of a ship out of sight which, under the present mode of construction and arrangement of the hold, cannot be got at unless she is thoroughly *broken out*, and the floor taken up, so as to expose the bilge and limbers. In a steamer these are the receptacles of oil and tallow used in the machinery, of a deposit of mud, by leakage, and of other matter which naturally finds its way there.

At sea, whether water is let into the ship or not, the leakage and pumping keeps this matter constantly diluted, but when a vessel lies in port for months, this dilution does not take place, and under favourable circumstances, of heat, moisture, etc., a pernicious miasm is generated, capable of producing disease. It is to this spot the origin of the malaria[1] on board the Susquehanna must be attributed, and the same thing will constantly recur on board of ships and steamers that remain for a long time in tropical ports, until there is some improvement made in construction, by which the bilge and limbers can be readily cleaned out, and kept constantly ventilated.[2]

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[1] Names of the officers at Royal Naval Hospital, Jamaica: C. R. Kinnear, Esq., M. D., J. P., Deputy Inspector of Hospitals, &c.; J. P. Burke, Esq., M. D., Staff Surgeon; Jas. S. Barry, Assistant Surgeon; Wm. J. Lewis, Assistant Surgeon; F. H. Rose, Assistant Surgeon; the last named gentleman, upon Captain Sand's application to Admiral Stewart for an additional medical officer in case of need during the passage home, most handsomely volunteered his services.

The intermittent and remittent fevers so prevalent on board, previous to the appearance of the yellow fever, doubtless had a distinct origin, and were caused by the malaria emanating from the swamps and lagoons, in the vicinity of which we were anchored. This conclusion is the more probable, since yellow fever was never known at San Juan before—the other ships in port had the intermittent and remittent fevers, but were exempt from the yellow fever—and patients, who had had attacks of intermittent and remittent fever, afterwards took the yellow fever, when convalescent.

Symptoms.—There is perhaps no disease which presents more varied symptoms than this, and in many cases it is so masked, especially in the commencement of an epidemic, as to render the diagnosis impossible.

The first cases on board the Susquehanna were of this character, viz:—

Case I.—L. B., æt. 55, was admitted on the sick list with cholera morbus, of which he was convalescent on the 18th of March. On the evening of the 18th he was taken with fever, which was thought to be the remittent prevailing on board, and was treated accordingly. Early the following morning the patient was found comatose. Cups were applied to the back of the neck, his hair was cut close, and cloths steeped in ice water were placed on the head; a stimulating injection was also given, the body rubbed with warm spirits, and sinapisms applied to the ankles. This produced no relief whatever, and as the pulse was full, and the breathing becoming stertorous, the patient was bled to 18 ounces.

He remained in the same state until the following morning, when he died, exactly as if from an attack of apoplexy. Upon post-mortem examination, the only lesion found was a large effusion of blood between the arachnoid and the brain.

Case II.—S. H., æt. 24, was admitted on the 22d of March. The attack was ushered in like the former. The patient took a mercurial purge, followed by castor oil, which freely operated on his bowels, after which he was ordered sulphate of quinine, in four grain doses, every fourth hour. The symptoms in this case were at first very mild, there being little or no headache or pain in the back, and no nausea or uneasiness of the stomach.

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[1] Since writing the above, this has been proved, by the fact, that now, nearly three months after the Susquehanna was abandoned by her crew, several persons employed in landing her stores have been attacked with yellow fever.

[2] The new ventilator of Lieutenant J. C. Beaumont, U. S. N., which was used with great advantage on board the U. S. frigate Wabash during her late cruise in the Gulf of Mexico, and which is now being adopted on board of our national vessels, is one of the most simple and efficient means of purifying the atmosphere of the hold ever invented. It is light and portable, not liable to get out of order, and can be readily transported about and set in motion by one person.

At 5 A. M. the following day, the patient was seized with profuse bleeding from the nose, and became comatose. A short time afterwards he vomited nearly a quart of bloody fluid, which at first was supposed to have found its way into the stomach from the posterior nares, but as there was no coagulation, suspicions were excited, and upon examination of the discharge, it was found to be true black vomit.

The symptoms in the succeeding cases became more and more developed, and corresponded generally with Baron Louis' description of the fever which occurred at Gibraltar, in 1828.

In this epidemic the fever presented itself under two types, the remittent and continued; the former being the most common. The disease was usually ushered in with few or no premonitory symptoms, the patient being seized with rigors, which were soon followed by fever, supra-orbital headache, pain in the calves of the legs and knees, rachialgia, injection and suffusion of the conjunctivæ, flushed face, resembling a person under the influence of liquor, tongue furred and soon becoming pasty, with red edges and apex (like raw beef), irritability of the stomach, with nausea and vomiting, and frequently tenderness on pressure, pulse more or less full and rapid, much heat of skin, and great restlessness. In the remittent form the stage of excitement, after lasting for two or three hours, was followed by general perspiration, which, after an hour or two, gave place to the fever. In this manner several exacerbations and remissions occurred during the twenty-four hours.

In the continued form, the stage of excitement usually lasted about seventy-two hours, at the end of which time the active symptoms ceased and the pulse began to give way.

In the worst cases, hemorrhages from the mucous membranes and yellowness of the skin usually occurred at this period, also fulness and burning pain in the stomach and œsophagus, suppression of urine, singultus and black vomit.

In some cases death was preceded by violent convulsions; in others the patient passed away calmly, remaining in possession of all his faculties to the last.

Mortality.—The crew of the Susquehanna consisted of 300 souls all told, out of which there were 170 cases of fever and 46 deaths. Seventeen died on board, 23 at the Royal Naval Hospital at Port Royal, and 6 at the Quarantine Hospital, Staten Island.

Besides these cases, there were very few of the remainder of the crew who escaped without some feelings of indisposition, which required medical treatment. Indeed, it was remarked, early in the epidemic, in mustering the crew round the capstan on Sunday, that every face had a yellow tinge, showing the effects of the poisonous miasm upon every one on board.

Prognosis.—It was impossible to foresee the termination of this most insidious of all fevers. Patients taken with very violent symptoms often got well speedily, whilst others whose cases appeared to be benign, were suddenly seized with the black vomit and expired.

Those cases in which the stomach symptoms were very severe from the beginning, were the most unmanageable and the most fatal.

Hemorrhages from the mucous membranes, and delirium, were frequently followed by recovery; but suppression of urine was a very grave symptom, and the black vomit always fatal.

Treatment.—The treatment was founded on the experience gained in several previous epidemics.

The very large doses of calomel and quinine, so highly recommended, could not be relied on.

In robust constitutions where there are no head symptoms, and no very great irritability of the stomach, these 20 grain doses might possibly be given without any bad result, but where the stomach is in an irritable condition, where there is constant vomiting or any cerebral congestion, they are decidedly contraindicated. Five or ten grains of calomel and quinine, either alone or in combination, were the largest doses given. If there were few or no head symptoms, the calomel and quinine were given in combination, followed by a hot pediluvium, and in four hours afterwards by an ounce to an ounce and a half of castor oil, and after the bowels were freely opened, two grains of calomel combined with four or five grains of quinine were given every three or four hours, according to the indications of the case.

If there were any signs of congestion about the head, the calomel was given alone. Cups were applied to the back of the neck, the hair was cut short, and cloths wet with ice water were placed on the forehead. When the congestion was relieved, quinine was administered with calomel, at first in small doses and cautiously increased. When there was great irritability of the stomach, and pain on pressing the epigastric region, cups were applied; but in the milder cases, blisters and mustard plasters were only used.

In cases where the vomiting was incessant, the quinine was administered by injection, and no medicine given by the mouth. Even upon the healthiest stomach, quinine acts as an irritant, and in a measure to counteract this influence, it was a general rule never to administer it without previously preparing the stomach with a little arrowroot or broth.

This may appear to be a trifling observation, but it is one which will be found of much importance in the treatment.

Chicken water and beef tea were given as early as possible, to keep the patient from running down, and a free use of wine was found indispensable, as we passed from a southern to a northern climate. One patient in whom no pulse could be distinguished at the wrist for two days, and who could not retain either port or sherry wine, was raised by iced champagne.

Very minute doses of strychnia were found useful in arresting the singultus so painful in this diseases.

The result of the experience gained in this and other epidemics were these:

That the use of large doses of quinine and calomel is hazardous; that a moderate treatment affords the greatest safety to the patient; that the stomach should be prepared for each dose of medicine administered, by arrowoot or broth; that where the stomach is very irritable, the quinine should be given by injection; that the patient should take nourishment early in the second stage, and that he should not be allowed to use any muscular exertion.

Yet, after all that has been written upon this disease, where is the physician, familiar with its ravages, who has not too often been obliged to regret the utter inefficiency of remedies, and who, after having tried all modes of treatment, has not almost been willing to confess, that the simple method used by the West India creoles, which consists in a dose or two of castor or olive oil, and a few tisans of mint, etc., is not as successful as any other.

Art. III.—*Report of an Epidemic of Typhoid Pneumonia, which prevailed in Caswell Co., N. C., in the Winter of* 1857–8, *and Spring of* 1858. By Bedford Brown, M. D., Yanceyville, Caswell Co., N. C.

The winter and spring months of 1857 and '8 were characterized by much wet and changeable weather, which gave rise to a very extensive epidemic of malignant typhoid pneumonia. About forty cases came under the observation of my partner, Dr. Roan, and myself. The access of the attack was generally sudden, and with but little premonition; the victim having been in the apparent enjoyment of health but a few hours previous. The earliest symptom was an acute pain in some portion of the body, sometimes in the head or chest, shoulder, hip-joint, and occasionally in the foot. This was followed in rapid succession by a distinct chill, which frequently lasted for hours, and was always attended with excessive vital prostration. It was not uncommon to find a patient twelve hours after the first accession of this chill with his system sinking down without the first effort at reaction. The pectoral symptoms were not usually troublesome. The patients complained more of simple uneasiness than actual suffering of pain. In fact, the nervous sensibilities were too much blunted by morbid influences to feel conscious of diseased sensations or impressions. This destruction of the nervous energies and sensibilities and want of consciousness was a remarkable and constant feature in the disease.

Another alarming and constant concomitant symptom was vital prostration. In many, the constitutional powers seemed to be too low to generate a reactive fever. Patients remained cold, almost pulseless, and unconscious for days, and were only sustained, even at this low point, by powerful stimulants, before any improvement in the symptoms occurred.

In all cases, without an exception, the pulse was remarkable for two characteristics, extreme feebleness and diminution of volume, while it varied much in frequency—often at a hundred and fifty, and not unfrequently at seventy. In one patient, I observed it at several of my morning visits at forty, while in the evening it numbered about seventy. Frequently patients would be found early in the morning without any perceptible pulse and unconscious. This I witnessed in several instances, and all reacted under the influence of active and plentiful stimulation. I have never observed any disease, in my own experience, in which the powers of life can ebb so low and be made to flow back to a state of health, by the judicious and prompt administration of remedies, as typhoid pneumonia.

Most of the cases were attended with a peculiar low, remitting form of fever, that had usually an exacerbation at evening, which seemed to act as a stimulus to the patient and bolster him up for the time, but during the night and morning a corresponding remission would come on, that invariably reduced the patient's powers proportionably low. In the appearance of the tongue there was nothing constant. In some cases it was red and dry, while in others it was soft, moist, and white; occasionally it was livid. Diarrhœa was generally present. Symptoms of a nervous character were prominently developed in nearly all cases. Low, muttering delirium and subsultus were very common. Stupor and somnolence were almost invariably present. In one singular case, a paralysis, confined to the muscles of deglutition, existed for several days before improvement commenced. Among the pectoral symptoms cough was usually not troublesome, neither was pain in the chest complained of any great deal. In many of our worst cases, both of these symptoms were entirely absent, or were not complained of. Dyspnœa was very distressing in only a few cases. The presence of these indications in a well developed form was good evidence of a more sthenic type of pneumonia.

The expectoration in the early stages was usually composed of thin, bloody mucus, while in many others it was almost purely sanguineous, partaking of the hemorrhagic character. The appearance of muco-purulent expectoration always denoted improvement. Out of nearly fifty cases, I have witnessed but three with genuine rust-coloured expectoration. The presence of this matter invariably indicated pneumonia of the sthenic form, and was a good criterion for depletive treatment.

Of the physical signs, percussion elicited dulness over the whole extent of the pulmonic disease. The fine crepitant rale of active pneumonia I never was able to discover in the typhoid; as a substitute, a coarse sub-crepitant rale generally existed. Sometimes in a few hours after the attack there was entire absence of all sounds. When improvement commenced, in place of the redux crepitation, the ordinary submucous rales appeared.

It was a little remarkable that, in all the female patients except one, there was a return of the menstrual period in a day or two after the attack of pneumonia. The exception spoken of did not menstruate during the pneumonic attack, and died. This was the only patient of the entire number that did not recover. Treatment was delayed too long in her case.

During the course of the disease emaciation progressed with great rapidity. In many, a few days sufficed to reduce the tissues like an attack of Asiatic cholera. Another peculiar symptom, always present in the coloured patients, was a dark jaundiced appearance of the sclerotic coat of the eye.

The evidences are strong in favour of the conclusion that much of the fatality in cases of typhoid pneumonia is due to the poison of carbonaceous matter being retained in the circulation. It is perfectly obvious that when, as is often the case, one-half, and even more than that extent, of the pulmonary circulation is in a complete state of obstruction, at least half of the entire amount of blood must be thrown out of the general circulation and remain stagnant in the system. Another difficulty here presents itself, in the inability of the heart and arteries to push the column of blood through the obstructed lungs. It is also probable that the vitality of both the blood and capillaries is so far annihilated in these cases that the mutual affinities between the solids and fluids are lost, affording another cause for the arrest of circulation. As some proof of this theory, while the nervous and vital energies were crushed with the rapidity and force of a narcotic poison, the complexion, in white patients, presented the lividity of a person breathing carbonic acid gas.

Treatment.—The indications of treatment in these cases were of a threefold character: first, to arouse the vital energies; secondly, to push the stagnant blood through the obstructed pulmonary capillaries, and equalize the general circulation; and thirdly, by means having a more permanent influence to subdue the latent inflammation peculiar to typhoid pneumonia. We discarded most of the standard rules for treating sthenic pneumonia, and marked out a course to suit the peculiar characteristics of the prevailing epidemic.

To arrest the sudden, rapid, and dangerous prostration that was such an alarming feature of this disease, diffusible stimulants and nourishment, in the form of brandy, milk-punch, and ammonia, were administered freely and without reserve from the beginning of treatment. Without them some cases would have died in six hours. The amount of stimulants given depended entirely on the exigencies of the case. Some patients consumed a quart of brandy per day—not for one day only, but for many in succession, and recovered without injurious consequences.

At a morning visit on one occasion to a patient, I found her cold, unconscious, and pulseless; brandy in ounce doses was forcibly poured down her throat every fifteen minutes, and under its influence I could perceive the slow and gradual development of the pulse, and the return of warmth to the surface. At first the pulsations numbered about twenty, and were scarcely perceptible to the touch; but increasing in a few hours while I remained, they recovered sufficient volume and strength to sustain the patient. At my next daily visit, the nurse informed me that she had given the patient more than a quart of brandy by measurement during the twenty-four hours, with decided benefit. This patient ultimately recovered.

It was our usual custom to administer brandy in ounce doses every hour or two, according to the demands of the case. In combination with stimulants, diet of the most nourishing and digestible kind, was as regularly enjoined as the remedies. I thought the rich milk punch combined these qualities to a greater degree, and suited the cases better than any other article.

As an adjuvant to other remedies, I cannot speak too highly of the carbonate of ammonia given in large and frequent doses. It appears to me to fulfil various indications in these cases, while it is a valuable diffusible stimulant, and affords a concentrated material for assimilation and nutrition. I must place confidence in opinions lately published in regard to its influence as a solvent of the plastic materials of the blood. When the vitality of both the solids and fluids is reduced to as low a degree as they usually are in typhoid pneumonia, the blood, after remaining for days in an engorged lung, must tend to coagulation. The fact is, in many of these malignant cases there is scarcely sufficient vitality to prevent it. It is under these circumstances that the carbonate of ammonia is of incalculable value. I am fully satisfied that it aids the circulation through the congested pulmonic capillaries by its solvent powers.

In most cases where the system possessed sufficient vital power to react after the first chill, a very low form of remittent fever was associated with the pneumonia. The pulse and animal heat declined very much during the morning, but towards evening a febrile exacerbation generally occurred. This indication led to the free use of quinine in combination with the other remedies, and I thought with much advantage.

In none of our typhoid cases was depletion, either local or general, resorted to. Blisters were used in the latter stages of the disease, but with little perceptible effect. Mercury, generally in the from of blue pill, was administered from the first in all cases, without an exception, for the purpose of removing the latent pulmonic inflammation; but, as its effects were slow, the system of the patient had to be sustained by the powerful stimulation above mentioned, until the recurrence of the specific effects of the mercury.

Our usual formula was pil. hydrarg. gr. iij, and sulph. quinia gr. iij, Dover's powder gr. ij, every three hours until the mercurial impression occurred, at the same time continuing the use of stimulants and nourishment. In many cases, in which for days prostration was so excessive as to prevent febrile reaction, as soon as the specific impression of mercury was made, febrile reaction, with a good full pulse came on. Purgation was restrained with opiates generally in form of Dover's powder or tinct. opii.

Dr. Norwood's tinct. of veratrum viride was resorted to in some of our cases of active acute pneumonia. In such cases it is quite equal to its reputation, and Dr. Norwood, I think, deserves great credit for bringing it before the profession. One case I will mention of double pneumonia, in which the pulse was a hundred and fifty, but small; skin very hot; acute pain in the chest on both sides; and great difficulty of breathing. The tinct. of veratrum was given in four drop doses every three hours. In twenty-four hours the general symptoms had so far subsided that the patient considered herself well. On withdrawing the remedy the same symptoms, but in a modified form, recurred again, and were a second and last time subdued by the remedy. For the pneumonia of very young infants the veratrum, in very minute doses, was resorted to with the happiest effects. For such cases I believe it one of the safest and best remedies in our possession. This constituted our entire treatment of nearly fifty cases of typhoid pneumonia, with the loss of only one, in which treatment was resorted to too late. After apparent recovery in some cases the lung remained indurated and impervious to air for several months. Iodide of potash in large doses invariably removed the condition.

A not inconsiderable observation of and experience in the management of typhoid pneumonia induces me to believe that, when treated as energetically by stimulants, as we ordinarily treat the active acute form by depletion, the mortality would be about equal in both forms of disease.

Art. IV.—*Histological Remarks upon a Secondary Cancer of the Pleura.* By J. J. Woodward, M. D., Assistant to the Surgical Clinic of the University of Pennsylvania. [Read before the Biological Department of the Academy of Natural Sciences of Philadelphia, June 21, 1858.]

In a paper read before the Biological Department on a former occasion I presented certain anatomical details of three cases of cysto-carcinoma. (See *American Journal of Med. Sciences*, July, 1858, p. 54, *et seq.*) In two of these cases (Cases 2 and 3), the disease had returned after extirpation with fatal consequences to the patient. The remaining case (Case 1), in which the primary tumour was removed from between the scapulæ, had not yet proven fatal, but it was stated that the patient was in a dying condition, presenting symptoms which were believed to be due to secondary formations in the lung. These symptoms continued, and she expired June 9, 1858. As of great significance in connection with interpretation of the appearances here to be recorded, I would note the absence of fever during the progress of the case, the pulse which became progressively feebler not being much accelerated until a few hours before she expired. A *post-mortem* examination was held twenty-two hours after death, the results of which it is the object of this paper to record.

Post-mortem Examination.—A light mulatto girl, of small frame, exceedingly emaciated. Between the scapulæ in the site of the primary tumour was a secondary growth of about the same size as the original, ulcerated at many points, sloughing and decomposing. On account of the diffluent and gangrenous condition of this growth, its anatomical details could not be satisfactorily made out.

The *heart* was small but healthy.

The *left lung* slightly congested but otherwise normal.

The *right pleura* contained more than a quart of a rich albuminous fluid of an oily feel, in which floated several large and beautifully diaphanous coagula of fibrin. The lung much collapsed occupied the upper and back part of the thoracic cavity.

Everywhere adherent to both the costal and pulmonary pleura, were opaque, soft, brain-like, pultaceous masses, which projected irregularly into the liquid filling the cavity. To the naked eye these pultaceous masses exactly resembled those which were described by me in the paper to which I have above referred as projecting into the cyst in the primary tumour in this case, and as more or less completely filling the cyst in Cases 2 and 3.

The *right lung* contained abundant pigmentary coloration, and was soft and readily torn. At several points throughout its substance were pultaceous nodules resembling the masses on the pleura.

The *liver* was nearly twice its normal size, and of a light yellow colour.

The kidneys, ovaries, uterus, pancreas, spleen, supra-renal capsules, intestines, and mesenteric glands, appeared normal. The encephalon was not examined. The several tissues were well preserved, no putrefactive changes being perceptible in any of the internal organs.

Portions of the liver, of the right lung, of the fluid from the right pleura, of the fibrinous coagula floating in it, and of the pultaceous masses attached to the pleura, were set aside for microscopic examination, to which they were subjected one hour after their removal from the body.

Microscopical Examination.—The *liver* was in an advanced state of fatty degeneration.

The *right lung* could be torn with needles for examination with abnormal facility; shreds thus obtained presented the characteristic arching of the pulmonary fibres. The preparation, however, was invariably obscured by large numbers of fat granules and globules (smaller and larger Aschersonian vesicles) and of pigment granules, the latter being isolated or associated in irregular groups.

The pultaceous nodules in the lung presented the same structural conditions which will be detailed below in connection with the pultaceous masses attached to the pleura.

The *fluid from the right pleura* of a ruddy straw colour, oleaginous to the touch, was composed chiefly of an albuminous solution, coagulating and becoming almost wholly solid with the heat of a spirit lamp. Microscopically it presented a small number of red and white blood-corpuscles; many of the former were perfectly normal, while others were variously shrivelled, with indented margins, stellate and contorted as red blood-corpuscles often are when they have been floating for some time in exudations. In size these corpuscles corresponded sufficiently well with those of fresh blood. The white corpuscles were exceedingly few in number, but three or four having been seen in the examination of upwards of twenty separate specimens.

Besides these corpuscles, larger and smaller oil-globules in limited number floated in the fluid.

The *fibrinous coagula* floating in the liquid were beautifully transparent, and, studied with an eighth of an inch objective, presented in the clearest manner all the characteristic appearances of the best specimens of fresh fibrin obtained by whipping from normal blood. I would especially note the predominance in sufficiently thin specimens of well-marked interlacing fibrils with double contours over the granular appearance which is ordinarily observed with the fibrils. Entangled among the fibrils were a small number of red blood-corpuscles, and a far more limited number of white. In the examination of some sixteen specimens from different portions of the coagula, each view obtained presented from six to eight red corpuscles. In but one of these the presence of two white corpuscles was observed.

The *pultaceous masses* in the lung and attached to the pleura were made the subject of careful investigation. In many specimens obtained from different parts, and studied floating in the fluid from the pleura, no structures whatsoever were to be observed except *nuclei*, oval, oblong, or irregular in their shape, of the same size, and presenting the same morphological characters as those described and figured by me in the paper to which I have above referred, as occurring in the pultaceous masses projecting into the cyst in the primary tumour in this case.

When similar specimens were treated with dilute acetic acid, no change occurred in the nuclei; a large number of delicate fibrils, however, made their appearance between the nuclei, variously interlaced and holding the nuclei in their interstices. These fibrils will correspond with the *mucin filaments of Carl Wedl.* It may be remarked in this place that these filaments can be regarded in no other way than as artificially produced by the chemical influence of the acetic acid, since they could in no manner be made out in specimens floated in the fluid taken from the pleural cavity. I must, therefore, for this reason, utterly dissent from the view expressed by Carl Wedl, that the mucin filaments may, under any circumstances, serve as the stroma for a new growth. (See Carl Wedl, *Path. Histology*, edit. of Sydenham Soc., p. 78, and especially p. 563.) For the mucin filaments being the product of the action of acetic acid—being, to use Carl Wedl's own words (p. 563), "evoked into existence by that reagent"—can with no propriety be predicated of the unaltered structure. I regard, therefore, the nuclei in this case, and in those to which I have above referred, as imbedded in a structureless material of a glutinous consistence, and, probably, of an albuminous character; the latter opinion being derived from the fact of the development in it by the reaction of acetic acid of the mucin filaments of Carl Wedl, which are only developed in albuminous fluids, as blood, pus, sputa from diseased lungs, &c. (Wedl, *loc. cit.*, p. 72.)

The pultaceous masses thus constituted formed irregular prominences projecting into the pleural cavity. These prominences, which were entirely devoid of bloodvessels, could not be considered closely allied to the dendritic arrangement described by Rokitansky in connection with many cancers of the serous membrane; from all such growths this differed not only in the absence of any *branchings* but in the absence, further, of any limiting membrane on the surface of the projections. The irregular character of the surface of the new growths in this case must, it would appear, arise simply from the fact of the more prodigal development of nuclei in certain situations than in others. And, indeed, after all, this fact, however we may presume to interpret it, lies at the foundation of all dendritic and papillary growths.

Observations.—Even in the present uncertainty as to what should and what should not be considered cancer, I presume no candid mind will deny the cancerous nature of the new formation above described. So far as morphological considerations can avail as the basis of classification, there can be no doubt of the correctness of such an opinion. But if in view of the unsettled state of our present histological views we appeal from the anatomical point of view to the clinical history, our view of the case appears still more abundantly confirmed. If, indeed, the history that I have written—the speedily developing primary tumour, the early return of the disease after extirpation not only in the cicatrix but in the internal organs, the rapid and progressive emaciation, the absence of fever, the presence of the growths above described, not merely on the pleura but in the lung—be not the history of cancer, to what *can* the term cancer be with propriety assigned?

This point settled, let us proceed, so far as possible, to interpret the phenomena above described; and, first, I would briefly refer to *the presence of red and white blood-corpuscles* in the pleural fluid.

Whatever opinions may be entertained as to the *possibility* of red corpuscles arising *de novo* in the substance of an exudation, no such opinion can, with propriety, be entertained in this instance. The red corpuscles, as will be seen by looking to the description above given, corresponded perfectly in size with those which would have been obtained by a hemorrhage (capillary rupture) into the exudate; and as, instead of observing embryonic or developmental forms, the complete and well-formed corpuscles were accompanied by shrivelled and misshapen ones evidently on the road to disintegration, we are not entitled to ascribe them to any other source.

Greater doubt, however, might lie in the interpretation of the white corpuscles also observed; since, as is well known, the formation of bodies isomeric with these (pus corpuscles, mucous corpuscles, lymph corpuscles, &c.)

does occur *de novo* in numerous exudates. As, however, here the number of white corpuscles present was very limited, not exceeding, probably, at the most, when compared with the red, the ordinary proportiou of white corpuscles to the red in normal blood, such a *de novo* formation cannot be predicated with propriety.

The source of the hemorrhage from which these corpuscles were derived was, probably, rupture of some of the capillaries of the pleura during the exudation of the fluid found in the pleural sac; and the quantity of blood thus extravasated, as indicated by the number of corpuscles, must have been but trifling when compared with the fluid referable to the exudatory process. Similar hemorrhages are frequently observed in connection with many exudations.

The *coagula of fibrin*, which were found floating in the pleural fluid, I must regard as having been formed *after death*. Previously to death the fibrin was probably in solution. To this conclusion I am led by the following considerations:—

1. Time sufficient for coagulation had been afforded since death. The possibility of this view is, therefore, self-evident.

2. The clot was too clear and transparent to have been of long standing, the inevitable contraction of coagulated fibrin soon rendering it more or less opaque.

3. Of great weight, also, must be the comparison of this fluid with that of the cyst in the primary growth. That contained no coagula when first evacuated, but on standing twenty-four hours fibrinous coagula identical with these were formed, the remaining serum resembling this most closely, both in its appearance to the naked eye and in the large quantity of albumen it contained.

In view of these considerations I feel myself justified in the conclusion that the fluid in the pleura during life was an uncoagulated solution, rich in *fibrin* as well as albumen, resembling closely, therefore, the normal liquor sanguinis of the blood on the one hand, and inflammatory exudations on the other, to which last class of cases it is yet further allied by the presence of the capillary hemorrhage so common in connection with them.

But if this conclusion be, as I consider it, justifiable on the grounds presented, it becomes at once important, in a doctrinal point of view, when it is remembered that we can regard this fluid in no other light than as the blastema from which the nuclei of the pultaceous masses were developed. That it must necessarily be so regarded requires, it would appear, no argument, every reason which can ordinarily be adduced to establish the relation between nuclei or cells and the blastema in which they are developed applying here. We have here, then, a *second case in favour of the position* advocated in the paper to which I have referred, that the cancer blastema contains *fibrin* as well as albumen, a position yet more widely generalized by Vogel, who applies the term "fibrinous dropsy" to the blastema of all organized new formations. In order to make this case more significant in the argument, however, as well as to show wherein its apparent peculiarities essentially consist, I would present on this head a few suggestions.

The peculiarities of this case lie—

1. In the extent of the pleural surface occupied by the new formation. It is, however, obvious that no specific distinction between this and other cancers can be grounded on this fact, which is one of *quantity* only and not of *quality.* Cancers of the serous membranes usually occupy a limited portion of the membrane. I know at present of no recorded case in which *the whole surface of a great cavity has been the seat of the growth.*

2. In the *quantity* of the exuded blastema. In this character it is strikingly allied to the primary growth in which we have seen a similar blastema existed in great quantity. (*Am. Journal, loc. cit.*)

3. *In the failure of any development of the elementary forms beyond the stage of nuclei.* This, however, can only be ascribed to a retarded or arrested development, and is, therefore, as was more fully pointed out in the paper above alluded to, rather a question of *time* or of *degree* than of essential nature; *for the very character of carcinomatous growths consists in the arrest at one period or another of the further development of the several elementary forms,* and it is because this arrested development frequently occurs at a different period in the *individual* elementary organs that there results as a consequence the multiplicity of form which is often regarded as characteristic of malignant growths.

But if, as here pointed out, the peculiarities in which the new formation under consideration differs from the more common cancerous growths reside entirely in questions of *quantity* of *time* and of *degree,* and not of *manner* or *essential nature,* it results that views of malignant growths suggested by this are to have their full weight when taken in connection with those arising from other cases.

I may also observe that no one can fail to be struck with much external resemblance between the appearances observed in the chest of this patient and those noticeable in certain cases of chronic pleurisy. This resemblance resides especially in the *extent* of pleural surface involved in the *quantity* of liquid exuded, and in the consequent *collapse of the lung.* The morphological characters above presented remove any possibility of classing this new formation with the products of inflammation in the sense in which that word is ordinarily understood, yet the comparison is full of interest as serving to show how slender is the border line which separates inflammation from other morbid processes. The single character which causes the resemblance here referred to appears to me to be simply the prodigally abundant exudation of blastema.

With regard to the *condition of the lung and of the liver.* The degenerated and collapsed condition of the lung is so readily accounted for by the consideration of the mechanical influence of the collection of fluid in the chest that it needs no special discussion in this place. The fatty degeneration of the liver is, however, worthy of attention, since it would appear from this that the anæmia of the last stages of this so-called cancer dyscrasia has at least this in common with the anæmia of other exhausting affections (*e. g.* phthisis, &c), that it may result in the impaired nutrition and consequent degeneration of normal organs.

Nor are we to look upon the fatty degeneration of the liver in this case as an accidental complication; it has been observed by others in connection with cancerous affections. Several parallel cases are detailed in Dr. Bennett's work (on *Cancer and Cancroid Growths*), and I am inclined to believe that further investigation will show fatty degeneration of the several organs to be a far more frequent complication of the latter stages of cancer than is commonly supposed.

It will be perceived that the whole of the above observations bear chiefly upon two doctrinal points: 1. Upon the cancer blastema. 2. Upon the cancer dyscrasia.

Of course this case, even when taken in connection with the three cases formerly described, will not justify us in positive conclusions; nevertheless, if these cases have been correctly detailed, they cannot be wholly without weight.

1. With regard to the *cancer blastema.* The pointings of these cases are towards an abandonment of the opinion that its special characters reside in the absence of fibrin and predominance of albumen in the exudation (albuminosis); and if in the present state of our knowledge we are yet constrained to regard the cancer blastema as specific, we are compelled to refer the specific character to some unknown modification which has as yet utterly eluded our investigations. Especially here is it to be observed that in mode and degree of coagulation, and in microscopical appearance when coagulated, both albumen and fibrin in the cancer blastema above studied *corresponded most exactly with the ordinary albumen and fibrin of the liquor sanguinis.*

2. With regard to the cancer dyscrasia I shall present no positive doctrinal suggestions, yet cannot but call attention to the fact that the fatty degeneration of normal organs above hinted coexists, as is well known, with a most characteristic fatty degeneration of the elementary forms of the abnormal growth. *The unknown modification of the liquor sanguinis in the exudation which stamps it as the cancer blastema is, probably, then identical with that unknown modification of the liquor sanguinis within the vessels in which the cancer dyscrasia is rooted.*

Lastly. With regard to the microscopical diagnosis of cancer I would call the attention of those who adhere to the doctrine of a *special heteroplastic cancer cell* to the fact of the existence of growths undoubtedly cancerous, *in which no cancer cells exist,* stating, at the same time, that in my opinion this does not invalidate the microscopical diagnosis, but must lead us to base a wise opinion on other data than upon the mere *shape* of the elementary forms; these data being found, as has been indicated by Carl Wedl (*Rudiments of Path. Hist.*), in the study of the evolution and involution of the growth as deduced from a profound investigation of the whole morbid mass. This part of the subject, however, I shall not enlarge upon at present; it will, probably, form the subject of a separate paper based upon investigations with which I am at present engaged.

ART. V.—*Remarkable Cases in Midwifery.* By GEO. SHEDD, M. D., of Denmark, Iowa.

THE wife of the writer was confined with her first child at the age of 32 years. She is of about medium size, has small bones, round features, and tense fibres.

This labour lasted about twenty hours, during the last ten of which the pains were the severest in strength and pertinacity the writer has ever witnessed. The difficulty experienced was in the passage of the inferior strait of the pelvis. I thought at the time that the os coccygis gave way by fracture before the head engaged in the lower strait. The child weighed 7½ pounds. Its head was a sadly deformed object, and for half an hour its life was despaired of. This was in January, 1846.

In January, 1848, she became pregnant again. Everything in her gestation was normal except excessive size.

One night in August, the thirty-fourth week of her gestation, she awoke from sleep all wet with water still passing from her vagina. Examination discovered that the os uteri was open to about the size of a dollar, and the vagina well lubricated with mucus or "show," *but there was no pain whatever.* I sent for female assistance. Shortly, another examination was made—the uterus was opening rapidly; *still no pain was felt in any part,* or of *any description.* Shortly she spoke again that something was passing from her—the child was emerging from the os externum, and was soon born. Yet in *all this, no pain was felt.* There was the sensation of something passing from her much like the feeling in defecation, but easier than any motion of her bowels experienced for many months. During her pregnancy she had been disposed to costiveness. This child weighed 4¼ lbs.

I was alone, and while trying to take care of the new comer and to quiet the alarm of the patient, she told me that another was coming. I made a hasty examination, and discovered the head of another child about to lock in the lower strait. I did not notice the particular presentation, and before I could command time to give her attention, uterine pains commenced. At my next examination I discovered a face presentation, and the head fully engaged in the lower strait with strong pains. These pains continued about three hours before the child was born, and when born, as in the case of the first child, its head was badly deformed.

There were no pains felt in this latter case previous to the engagement in the strait any more than in the previous one. Had the latter been an occiput presentation, there is no doubt but it also would have been born without the sensation of pain.

In the latter birth I administered chloroform to mitigate the severity of her pains, and when she was delivered she seemed scarcely to have undergone labour. She could hardly be said to be "confined." In one week she was about the house almost as if nothing had happened. I present this as a case of interest, and without a parallel in respect to the absence of uterine pain, within the range of my reading or knowledge.

[A case of unconscious delivery will be found recorded in the preceding number of this Journal, p. 270.—Ed.]

Mrs. Y—— has given birth to five children. In all her labours she has been attended by the writer. Her oldest child is now 15, her youngest is an infant.

In her first gestation her waters "broke" on Monday morning, and continued to pass away gradually and daily until the next Friday night, when her pains for the first time were felt, and she, after rather a short and easy labour, became confined. The writer did not arrive till after expulsive labour had commenced. She was not conscious that any bag of waters broke during her labour. Everything was normal, and her convalescence speedy.

With her next child she carried her waters till the expulsive stage of labour. This child died of convulsions a few hours after birth.

During her third pregnancy she lost her waters three weeks before confinement. At first the discharge was sudden and abundant, and afterwards continued to pass away gradually and daily quite to the time of her labour. During these three weeks she was comfortable, and much of the time up and about the house. At her accouchement the usual bag of waters was presented, and broke under the observation of the writer. Other characteristics of a natural and easy labour were present. The child was healthy, weighed 10½ lbs. Her recovery was speedy. Much interest was felt at the time in her case by the ladies in the village.

Her fourth gestation and labour were natural and normal throughout.

About the middle of July last she became pregnant again. Her last catamenia commenced on the 12th of that month. Everything seemed right until the 9th of February, thirty weeks from last catamenia, when her waters broke and passed away quite freely. The 11th and 13th, they also passed away largely; the last day more than either or both of the other two, and as much quite as was usual at her former labours. On the intermediate days (the 10th and 12th) no discharges took place. During all this time she suffered much pain in her back.

After these discharges she went till the morn of the 4th of March without any further appearance of waters. At this time her waters broke again and gushed away at first in large quantities, and passed gradually during the day. There was considerable pain in her back, as in the former case, and she anticipated premature labour. In the evening the writer was called in to see her. She was suffering some anxiety of mind in regard to her condition and prospects.

An examination per vaginam showed that the os uteri was in nowise dilated or dilatable. The lady was quieted with such assurances as could be given. She was told that the inner membrane, in whose waters the child is situated, remained probably unbroken, and she and her child were yet safe. After this she passed along for two weeks, when another discharge took place. At this time the discharge was still more copious than at any previous time, sufficient to saturate thoroughly three or four sheets. The pain in her back was considerable, and it was confidently expected by her attendants and herself that she would be sick. The writer did not see her at this time.

On the 21st, three days after the above, another discharge, which continued for about three days. Her attendants think her discharges grow more abundant as well as more frequent. After these discharges ceased, all became quiet again. Health comfortable.

The 28th, another bursting of the floods, which continued to trickle away for three days afterwards. On the 30th, the third day of this discharge, the writer made an examination. The os uteri was found dilated to the extent of about two inches, and very soft and pliable. The finger could be passed easily all over the presenting head of the fœtus within the uterus. A very abundant "show" was also present. How long this condition of things had existed cannot be known. She seemed ready for expulsive labour, yet felt and had felt no pain except in her back, and this was unlike the normal pain of labour.

I was confident that efficient labour would soon be ushered in. This was about 10 o'clock A. M. I spent much of that day and night with her, but without any special change. During the night I tried very cautiously the wine of ergot. This produced regular pains for three or four hours, and for a while they seemed normal pains, but they produced no appreciable effect upon the uterus. She said they seemed to work up rather than down. The next day the pain and the discharge all left her, and I thought the os uteri a little more contracted and a little firmer. The "show" was still present and abundant.

Previous to all the above discharges she became very much enlarged, "bloated," as she thought, about the abdomen. After each evacuation the bloat subsided, except her proper enlargement. There was no other evidence of ascites or anasarca.

During the time spent with her, on the above occasion, I performed ballottement several times with great ease and distinctness. Notwithstanding the great amount of evacuations, the fœtus seemed to float in water, and could be raised in that fluid from and above the mouth of the womb a full inch. The motions of the child also were strong and distinct.

April 7. Made an examination this day for personal knowledge. Has been one full week without any discharge of waters. Bloat is very large, but lower in the abdomen than heretofore. Motions of the child perceptible, but not very distinct. Health good; is able to be about the house to some extent.

To-day is the 269th since her catamenia. The examination showed the os uteri dilated much as at the former examination, and the vagina well lubricated with mucus.

10*th*. Pain in the back, again, but otherwise comfortable; retired early and went to sleep. About half-past ten o'clock another bursting of the waters, and more violent than ever. About fifteen minutes after this a strong uterine contraction was felt, which was recognized as a normal labour-pain. After two or three more pains her husband came for me in haste, a distance of five or six squares. I hurried to the house and found him alone with the lady, unable to leave for help. She had four pains after my arrival, and was delivered of a plump, healthy child, weighing ten pounds. All was over before 12 o'clock. At this writing she is very comfortable, and has a good prospect of a speedy convalescence.

Several important questions present themselves in connection with this case. Whence these waters, so often evacuated and so abundant? Did they come from within the uterus? If not, whence did they come? But it seems to me certain that they came from within the uterus. If this be so, from which of the several membranes? Were they from the waters of the amnion? Has the liquor amnii ever been known to have been lost, and yet the fœtus be carried any considerable length of time afterwards? But it does not seem probable that these were the liquor amnii, for on one occasion, after the most abundant discharge then suffered, the fœtus was most evidently floating in water, as was shown by ballottement. So, too, in the case of her third child, the water passed away three weeks before labour, and every day during that time, and yet, at her confinement, she presented the usual *bag of waters.* Were they the waters of the chorion? The doctrine of the books, as I understand it, is that the space between the chorion and amnion in the latter stages of pregnancy becomes quite obliterated. Rigby gives a remark from Lobstein, "that the membranes continue separate from each other so late as the third and fourth month, and that cases now and then occur when a considerable quantity of fluid is found in labour at the full period of pregnancy."

How have these waters been enabled to gather themselves again so repeatedly, so abundantly, and, in some cases, so speedily? Did the ruptured membranes heal together again, or did new ones form for the retention of the waters?

Then, again, the opening of the os uteri to so great an extent, and its long continuance in that condition, are an anomaly in my reading and experience of sixteen years' practice. Have others ever witnessed the same thing, and can it be explained? So, too, in regard to the "show," as perfect, as it seemed to me, and as abundant, or nearly so, as occurs in the expulsive stage of most labours. According to my reading and experience, this "show" is rightly regarded as the harbinger and precursor of labour not far distant. And yet, in this case, the vagina was lubricated with mucus, as in labour, for eleven days at least, and probably longer.

[For an interesting case of premature discharge of liquor amnii, and for some remarks on watery discharges from the uterus during pregnancy with cases, the reader is referred to the preceding number of this Journal, pp. 266 and 267.—Ed.]

Art. VI.—"*Meddlesome Midwifery is bad*" (Blundell).—A dissertation read before the New London County Medical Society in 1854. By Isaac G. Porter, M. D., of New London, Connecticut.

There are few medical maxims more truthful and salutary than that inculcated by the immortal Baglivi: "Scire multa, agere pauca," which may be freely translated, thus: "Let your knowledge, on all subjects, and especially of disease and its remedies, be thorough and complete; yet, beware of frequent and unnecessary interference with the recuperative efforts of nature." Call to mind any serious case of disease, and over what a multitude of particulars must the mind glance, before we can prescribe with safety or advantage. Hereditary and constitutional peculiarities must be regarded. Anatomy, physiology, pathology, diagnosis, and treatment, all must contribute their aid, not forgetting whether the disease is self-limited, or of indefinite duration, and in what form it is likely to terminate, that we may "obviate the tendency to death."

But the knowledge, referred to by Baglivi, is doubtless not simply professional. No species, if rightly used, is without value. Who has not been struck with this truth, in our courts of law, when he has witnessed the decided advantage which an advocate of general information possessed over his more ignorant opponent? Let the case have relation to some real or alleged instance of malpractice, as a "broken-bone case," and let a shrewd lawyer, who is a good anatomist (made so perhaps by a few hours' study on the point in question), be employed, and woe to the reputation and influence of the medical witness, with the jury, if he cannot tell the name of every little process, on a corresponding bone, presented to him, or the origin and insertion of every muscle implicated. It is *undue* advantage, I grant, which is gained, but it shows that "knowledge is power." And while it is affirmed that the same power makes itself equally felt in medicine, it must be conceded that, on scientific subjects generally, the various branches of natural history and the arts, our profession is decidedly in advance of the others. There is something too in the nature of our pursuits, which, beyond any other, tends to produce sound, practical, common sense. A late President of the American Medical Association, in his annual address, says: "It has been my fortune to know many of my professional brethren, practising in obscure country situations, whose talent, sagacity, and practical information would, under more auspicious circumstances, shed lustre on their names and calling." But the amount of what we can *usefully do*, for our patients, when contrasted with this aggregate of knowledge, shrinks into comparative insignificance.

But it is our design to apply this doctrine particularly to midwifery, and to show, by practical and individual references, that the more we *know*, the less, generally, we shall *do*. In the sententious expression of Blundell, selected for our caption—"Meddlesome midwifery is bad."

First, in the order of nature, comes—

Abortion.—It is our purpose to speak merely of the use of the tampon. Without stopping to decide the mooted question, whether the hemorrhage proceeds from the placental superficies of the womb, and always implies a greater or less detachment of the placenta, or whether it is the result of "decidual hyperæmia, an exudation from the distended and overloaded bloodvessels of the decidua, without rupture;" in either case, the premature use of the tampon is alike injurious; in the former, by causing a remora, or accumulation of blood, within the uterus, and under the edge of the placenta, which it separates more and more; and in the latter, by preventing a salutary disgorgement from the overloaded vessels of the decidua, which condition, previous to the eruption, had shown itself by a sense of fulness and weight, which passed off with the flow. Safety, therefore, requires, where abortion is not certain, that we defer the use in question, as long as prudence will justify.

II. *Bleeding in Pregnancy.*—Plethora, doubtless, sometimes exists requiring the lancet. But there are symptoms, such as headache, flushings of the face, and full, frequent pulse, which are common to plethora, and to anæmia. In the latter case, the blood being impoverished, as it often is in pregnancy, does not afford the usual healthy stimulus to the nervous organs; hence the necessity of more *frequent* pulsation of the heart, to supply in quantity what is wanting in quality. The *fulness* of the pulse is owing to polyæmia, the vessels carrying only serous, watery fluids. The *headache* may result from congestion, and will be relieved by a stream of cold water to the head, mustard pediluviæ, purgatives, &c. These affections are all referable to a depraved condition of the blood, and the noxious influence it exerts on the nervous centres. So strong is the prejudice of common people in favour of bleeding in pregnancy, that, if in doubt as to its propriety, it is well to err on the safe side. Still, with nice discrimination, there need be no error. Confidence in one's self, decided opinions, and sound judgment, are safer counsellors than the fear or favour of popular prejudice.

III. *We next speak of converting one Presentation of the Head into another.*—These are the occipito-posterior or "forehead front" into an "occiput front," or a face presentation into a vertex, by replacing the head of the child on its breast. These changes were strongly advocated by Dewees, and he held any man incompetent to practise midwifery who was unable to detect and rectify them in time. It would require boldness to affirm that, in his hands it may not often have been done, and with advantage to the patient. Indeed, in early practice, the writer thinks he used to accomplish it, though the impression now is, that, though labour may have been shortened, yet that the amount of suffering was but little, if any, diminished. It is now settled by later and equally trustworthy authorities, such as Rigby, Mad. La Chapelle, Collins, and others, that the change is not advisable or necessary, that more evil than good results in ordinary cases, and that nature is competent, though with some delay and difficulty, to complete the delivery. In face presentations, Dewees maintains that forceps are generally required, while others claim that, in an ordinarily good pelvis, nature alone is perfectly competent. Boer, of Vienna, is very decided in his language: "Face presentations, being merely a rare form of natural labour, should be left to be completed by the natural efforts, since neither the mother nor her child is exposed to any more danger in this form of labour than in the most usual of all." In attempting to convert a "forehead front" into an "occiput front," we are often unsuccessful, and, if successful, only anticipate what nature often does of herself. The general rule (to which, however, there are a few exceptions) was quaintly expressed to me by an old practitioner of large experience, when speaking on this subject: "If," said he, "I find the head coming, I say to myself, *let it come.*"

IV. *Rupturing the Membranes to expedite Labour.*—Few operations require more judgment. Sustained by the opinion of Dewees, of its efficacy, in certain cases and conditions, and having long waited, in vain, in a case of tedious labour, the temptation to interfere, even where the os uteri is but partially dilated, and more or less rigid, is very strong. But, if performed prematurely, and when the delay is to be ascribed to other causes than an unbroken membrane, we may see cause deeply to regret our error. In place of finding the head advancing at the succeeding pain, we often have the mortification of meeting a strong, spasmodic contraction of the os uteri, as if it resented the ruder contact of the presenting part.

The question may be interesting, why more injury results from voluntarily *rupturing* the membranes, than follows a spontaneous rupture, at the outset of labour. In both cases, impeded action of the uterus results, owing to the fact that the head of the child presses unequally on the os uteri, in some portions more, and in others less; and hence the tumidity and puffiness which ensue. When the rupture happens before the neck is at all expanded, the uterine circulation better accommodates itself to the circumstances, than when the accident occurs later in the progress of labour.

It is only the *abuse* of this procedure which needs condemnation, for where there is great uterine inertia, or an inordinate quantity of liquor amnii, or the membranes protrude into the vagina, and are very *tough;* the os uteri meanwhile dilated, or very dilatable, the operation is safe and eminently successful. So, in cases of alarming prostration, with obstinate vomiting (labour meanwhile suspended), rupturing the membranes and irritating the os, has, in the writer's practice, resulted in the happiest change.

V. *Nates Presentations.*—In no other presentation is there the same demand for a "masterly inactivity." The welfare of both mother and child, especially the latter, is at stake, for if the soft parts of the mother are not well dilated by a gradual passage of the breech, before the head of the child enters, it is nearly always lost. Hunter used to advise pulling down the feet, and delivering by force, but in the latter part of his life, he ceased giving that direction, owing to the evils which resulted. As all know, there are two positions of this presentation: 1st. With the back of the child forwards, which is the most common; and 2d, with the abdomen of the child forwards. Now, it is very desirable, in order that there may be no delay in extracting the child's head, that the *back* of its head should come under the pubes. Strange as the fact is, whatever may be the presentation at the beginning of labour, the child (according to Nægele's law) will always, if not interfered with, be found with its anterior surface turned towards one or the other sacro-iliac synchrondosis, when the shoulders are beginning to pass through the outlet of the pelvis. The child makes a *complete turn*, in order to present its occiput under the pubis of the mother. But not so, if *dragged* down in the false position, in which it may first have presented itself.

Suppose, again, the back of the child comes down next the maternal abdomen (as is most favourable), strong traction, immediately after the exit of the nates, will cause the head of the child to engage with its longest diameter between the sacrum and pubis of the mother, and thus, by being locked, produce difficulty and delay.[1]

Again: "If the child is rapidly expelled, after the escape of the hips, being *assisted*, as it is called, the fundus of the womb ceases to press upon the head, the chin quits the breast, a space is thus left, and the arms, which are usually folded on the breast, slip into it, and finally turn upwards, so that not only the head enters the pelvis, in an unfortunate position, but it has also an arm on each side of it. Thus, not only the child is lost, through over-anxious interference, but it is extremely difficult to extract a head thus wedged into the pelvis with one or more arms."[1] Truly, there is wisdom in the Fabian policy—"*cunctando* restituere rem"—and in a parallel passage in Scripture, where it is said of some, "Their strength is to sit still."

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[1] A case of this description, in the hands of an ignorant midwife, furnished my introduction to this branch of practice. After the delivery of the nates, there was something to *pull at*, and, Amazon as she was, she had diligently, but ineffectually, applied her strength for the space of three hours. Having just completed my pupilage, under Dr. Dewees, I fortunately recollected his direction, in such cases, to make traction by raising the body of the child nearly perpendicularly, while pressure was made with the other hand on its occiput, and succeeded at the first effort. She had the cunning to intimate that my superior success was owing to greater strength in my arms.

VI. *Mechanical Irritation of the Os Uteri as a Means of expediting Labor.*—We now enter on the discussion of a disputed, but important point in obstetrics. Some years since, it was claimed by Professor Hamilton, of Scotland, a man of most extensive experience (and in his views he was supported, in the latter part of his life, by the prudent and judicious Burns), that the os uteri should always be dilated within twelve or fourteen hours from the *real* commencement of labor, which is betokened by regularly recurring pains, and a tightening of the edges of the os uteri. Spurious pains are not counted; and if there are intervals of repose, caused by agitation or mismanagement of any kind, there being, meanwhile, no injurious pressure, this interval is not included; but the limited time, specified above, dates from the recurrence of the pains. The same views are advocated by Prof. Miller, of Kentucky, author of a recent work on midwifery. These gentlemen also claim that, where *a shortening* process is not resorted to, women of feeble constitution are sometimes destroyed by a prolonged first stage (or opening of the os uteri), the uterus becoming exhausted, hemorrhage ensuing, &c.; and as an instance, adduce the case of the celebrated Princess Charlotte, of England. Her labour commenced at 7 P. M., and was not completed until 3 P. M. of the following day, a period of twenty hours. They also claim that in a prolonged first stage, the child usually perishes, as happened in this case, from pressure on the cord.

Having stated the claims of these gentlemen, we proceed to speak of the means by which they would expedite labour. As preparatory, they place great reliance on bleeding, when indicated by a full pulse, and especially in rigidity of the os, from premature rupture of the membranes, on cathartics and enemas: all of which, if indicated, should first be tried. But, if the pains still remain infrequent and of little power, the os uteri being thin and lax, we are instructed to introduce a finger to the os, during a pain, or, if necessary, when there is none, and by gentle semi-circular motions, first in one direction and then in the opposite, for about a minute, to *excite* uterine action. The finger is to remain, between the pains, and the excitation to be renewed, for several successive pains, more or less, according to the effect. This is claimed to be a vital, not a mechanical principle; and it is denied that the os is dilated at all mechanically, if the operation is rightly performed.

On the other hand, Denman, Ramsbotham, Collins, and other English authors, prefer and recommend *patience* in protracted labours, believing that nature is almost always competent to effect delivery, and with less risk, on the whole, than where interference of the kind indicated is attempted.

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[1] Rigby.

As a further offset to this principle of Hamilton and others, that the os uteri must be dilated within the time specified, we have the opinion of Churchill, in these words: "Delay, in the first stage, involves very little, if any danger, however tedious it may be, for the stress or strain comes on parts where it can safely be borne; but delay in the second stage is very different. The nervous shock is never in proportion to the first stage, but to the second; and the greater the nervous shock, the more unfavourable the convalescence."

Without attempting, for the present, to decide which party is in the right, it cannot be denied that in excitation of the vagina and os uteri, we have a powerful agency for good or for evil. Through the excito-motary system of nerves, irritation of any set of nerves, transmitted to the spinal marrow, is reflected in divers manners, and upon different organs. Thus, as crude articles in the primæ viæ of children often result in abnormal muscular contractions, called convulsions, so irritation of the os tincæ and vagina, both before, and in labour, is generally followed by uterine action, or labour-pains. We often hear the expression—"stomach cough," or "worm cough." What is this but irritation of other organs, *reflected* on the lungs in the form of cough? So, under the operation of the same law, reversing the organs, we have vomiting in phthisis, and vomiting from irritation of the fauces with a feather.

This doctrine has been fully developed and insisted on by Tyler Smith; and the connection claimed is also shown in the fact stated by Madame La Chapelle, that the pains in the last stage of labour are often greatly increased by introducing two or three fingers into the posterior part of the vulva, and making pressure on the anterior commissure of the perineum. We have all, doubtless, seen this, when we have made the pressure indicated, for the purpose of exciting the uterus to throw off a retained placenta. Supporting the perineum will, occasionally, seem to give greater intensity to the pains.

In the last stage of labour, the head having long remained nearly immovable at the external parts, merely through uterine inertia, we think we have often hastened the crisis, and avoided the use of ergot, by placing the patient in the sitting posture, over a vessel of warm water, on the bed. The vapor may have been measurably advantageous, but the downward pressure of the child on the labia and perineum more so: a few pains completing a labour which was beginning to cause apprehension. So necessary, to some women, is this "orificial irritation," that, without it, their labours are greatly and unnecessarily prolonged; and with it, in such cases, seldom do we see more rapid and marked results.[1]

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[1] An intelligent lady, of this city, the mother of several children, removing to New York, employed a physician in her accouchement, who, for some reason, did not act on this principle. Knowing, from past experience that labour was rapidly impending, and that assistance had previously been requisite, to centralize her pains, she would not suffer him to leave her side; and in this way, a whole day of intense anxiety was spent. Although, at the time, without *obvious* labour-pains, she at length said to him: "Doctor, if you don't assist me, I shall send for another physi-

Having, as we trust, established the principle as a most important one, we come now to speak of its abuse. It were superfluous to repeat Denman's old caution against frequent touching, as removing viscous secretions, and by mechanical means, producing a subinflammation of the parts. The principle not being one of *mechanical* dilatation, the most that is allowable, in any case, is so to press the finger upon any lax portion of the os, as to equalize the stress of the pains, and secure its equable dilatation. Unfortunately, we are supposed to be able to do much more for our patients in natural labour than is at all consistent with their best good, especially if it be rapid or violent. In such cases, the less we do, the better, if so be we inform ourselves as to the progress of labour. If, on the contrary, our manipulations are frequent and violent, we risk such undue uterine action as may result in a premature rupture of the membranes. Tyler Smith says: "The practice of taking pains has caused nearly as many accidents as the ruder forms of malpractice. The uterus has been ruptured by the uterine action of taking a pain, and a fatal convulsion has been caused by even the cautious introduction of the hand into the uterus." Dr. Ramsbotham has detailed two most interesting cases, in which rupture of the uterus occurred while careful examinations were being made at the acme of the pains." These results are immediate; but who shall decide how many of the hypertrophies, the indurations, and the ulcerations of the os uteri, so common at the present day, may be traced to unnecessary manipulation in some previous labour?

Omitting, for want of time, the discussion of other topics, involving meddlesome interference in practice, such as the use of forceps, and of ergot, retained placenta, and placental presentations, we only add, in conclusion, that, in the foregoing remarks, we have advised the *cautious use* of the tampon in abortion, not, of course, its disuse; we have spoken of unnecessary venesection in pregnancy, not denying that it is often proper; we have dissuaded from unnecessarily converting one presentation into another, not affirming but that it may be imperiously demanded in some cases. The same is true in regard to rupturing the membranes, to the management of nates presentations, and to the excited dilatation of the os uteri. It is not the *use* of measures (often proper) that we have objected to, but the abuse. Knowledge alone can guide us when, and how to act. It is much with the body corporate, as with the body politic; in medicine, as in the management of the family, the school, the college, the state. We must be careful, and not govern *too much.* The ruler must not *see* every trifling offence; or, if he see it, he must act as if he saw it not. "The true art consists in governing *just enough;* not too much, not too little. This by no means implies that a government thus administered requires less mental labour, less constant vigilance, less application of wisely concerted measures. It requires incessant *supervision,* but not

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cian." This aroused him to do the needful, and the child was born, with only two or three pains.

incessant *action.* It imitates the example of a distinguished member of our revolutionary congress, who was a silent observer, in his seat, as long as he saw that the proceedings were taking a right direction. His voice was heard only when he observed that something was going wrong."[1] Let us not, then, unnecessarily attempt to shake the fruit from the genealogical tree, which, of itself, must soon fall into our lap. Let us perform none of the operations referred to, simple as they may appear, until we have given the subject the rapid, it may be, but "sober second thought" of careful deliberation.

ART. VII.—*Midwifery Cases.* By RICHARD MCSHERRY, M. D, of Baltimore.

CASE I. *Fatal Case of Cancer of the Womb; Pregnancy and Artificial Delivery.*—A lady from South Carolina came to this city in November, 1855, suffering with extensive morbid growth about the cervix and os uteri. She was sallow, anemic, and bloated in appearance, being somewhat dropsical and short-breathed, with much functional disorder of the heart. The globe of the uterus rose well up in the hypogastric region, and she believed herself *enceinte*. She was placed under the care of Prof. N. R. Smith and myself; but after careful examination and inquiry into the history of the case, we both considered her, in the last respect, mistaken. During the preceding summer her husband had been absent for some two months, and returned home about the 1st of July. The month had not expired before she began to suffer from copious and alarming hemorrhages. These continued more or less for three months, during which time she remained at home, under the charge of her medical attendant, Dr. L. Myers. This gentleman informed me by letter that he considered her pregnant, and that the hemorrhages were owing to partial separations of the ovum from its connections. He was strengthened in his opinion by the fact that she had over-exerted herself in attempting to lift a heavy weight; and furthermore that, upon repeated examinations with the speculum, he could detect no existence of any visible tumour. The great excrescences, then, that were so obvious to Dr. Smith and myself to the touch (for by this time the lady was unwilling to be examined by the speculum, and was even much averse to any examination, for fear of renewal of hemorrhage), must have sprung up since that time. But the disease had taken possession of her anterior to the hemorrhages, and anterior to her husband's return. This I infer from a remark that she made casually, upon his not recognizing her then at first sight. The cancerous cachexy had wrought a change in her appearance, manifest to the watchful eyes (*oculis fidelibus*), of her husband, before the local disease could be detected by the search of the surgeon.

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[1] Pres. Day.

In the month of October, she was removed by sea from Carolina to New York. Just before entering that port, she was seized with a fearful hemorrhage which nearly proved fatal to her. She reached New York, however, and under the care of Prof. Bedford, recovered sufficiently to be brought on (by canal) to her brother's house in this city.

After such repeated and profuse hemorrhages, Dr. Smith and myself agreed that the probabilities were against her being pregnant, and we made known this opinion to her, without, however, succeeding in changing hers. She believed herself pregnant, and she wished it so, for she was evidently under the conviction that her troubles were all owing to her pregnancy, and that as soon as she was delivered, they would all be at an end. There was no considerable hemorrhage at any time after she left New York, but from the immense fungi which surrounded the cervix, we were always apprehensive of a return. Occasionally there was free discharge of watery fluid, once amounting to two quarts, she said; and accompanying these discharges there was sometimes a show of blood.

Under a course of expectant treatment, varying between tonics, anodynes, and saline aperients, with the use of astringent and soothing injections, *in vaginam*, she improved steadily in her general condition, under which circumstances Dr. Smith withdrew, leaving me in sole charge as the family physician. In the mean time, the womb continued to enlarge, and the lady declared that she felt habitually the motions of the fœtus. At length, all doubt upon this subject was removed by the audible pulsations of the fœtal heart. I then told the family the state of the case, and my own conviction that she could never be delivered of a child *per vias naturales.*

During the month of March the lady suffered more than usual with pains in the loins and hypogastric region, which pains were somewhat alleviated by the external application of belladonna. There were continuous discharges of bloody mucus and water. On the 29th of March, I found upon my record that this patient was suffering with intermittent uterine pains, in addition to others; the womb had subsided, and was evidently preparing to throw off its contents. For days and nights these aggravated sufferings could only be appeased by free doses of morphia. The os tincæ was completely occluded under a circular cushion of fungous growth, but the fungi were not so large as three months previously.

Up to the 7th of April, the lady always felt the motions of the child; and the fœtal heart could be heard distinctly; from the 7th to the 10th, there was no motion, and although she thought she felt obscure movement on the 11th, and never after, there was no sound of the fœtal heart from the first stoppage of motion.

Her friends, warned of her danger, desired that Dr. Ferdinand Chatard, on account of his great experience in obstetrical practice, should attend her with me.

I will now adopt, somewhat condensed, the language of my notes.

April 21, 22, 23. Mrs. D. has occasional labor-pains, with hemorrhage; womb opened to about the size of a silver dollar; parts exceedingly hard and thickened; the yield is in the anterior lip; bag of waters gradually projecting, but no increase of opening; thus the bag takes a globular form, hanging by its pedicle from the unyielding os. No portion of the child can be touched through the membranes. *Pains* intensely severe, but transient; pain persistent. She says she feels as if something ought to break away, or be cut away, to give her relief. Bowels and bladder receive due attention.

24*th*, 25*th*, 26*th*. Decomposition commenced in the fœtus; head makes some advance. Removed a protruded and fetid piece of scalp. Fetor from child, and decomposed granulations, exceedingly offensive; great abdominal soreness. Pains masked by excess of pain. Circle of os scarcely yields perceptibly; bones of the head can be felt overlapping. Pains soothed by anodynes. The induration and thickening of the parts extend as far as examination can reach; and fungous excrescences abound in every direction. Pulse quick, and without force; general aspect anemic and yellowish; features pinched and contracted. Fomentations to the vulva, and mild injections are grateful and detergent. Chloroform and ether given occasionally by inhalation.

27*th*. Morning. No improvement. Aperient: Ol. ricini, and enema. Syringe vagina, and bathe vulva, as usual. Anodyne of McMunn's elixir. Evening. Met at seven o'clock. Pulse has less force every day. Bones of skull are thrust against the os, which is dilated to near two inches in diameter. We determined to attempt the removal of the child. By the most patient perseverance, Dr. Chatard removed all the bones, one after another, of the cranium, and at half past nine the body was brought down. Dr. C., having found an arm, drew down the hand, and inserted his hook. The body was soon extracted, but, in the passage, there was a vertical rupture in the posterior lip of the womb. The after-birth was duly brought away, and was large, flat, and indurated. The child was a male, and was partially putrescent.

I administered, during the operation, nearly an ounce of mixed chloroform and ether; she was never thoroughly under their influence, as she complained at times of pain; but more than once there was stertorous breathing, and intermittent, thready, and almost imperceptible pulse; once there was spasm; under such indications, the anæsthetic was suspended, and wine given.

The operation over, we gave her half a drachm of the fluid extract of ergot, and made moderate friction, under which the womb responded and contracted. The pulse rallied under the use of wine and McMunn's elixir, but flickered, without constant stimulation. Still she gradually failed, and died easily and calmly of exhaustion, at three o'clock P. M., on the 28th of April, 1856, in the twenty-eighth year of her age. She left two living children, the youngest being two years old. I could not get the privilege of a *post-mortem* examination.

This case is remarkable on account of the womb retaining its contents up to term, in spite of frequently repeated, and profuse hemorrhages; particularly profuse during the early stages of pregnancy. No doubt the ovum was saved by the very fact that the hemorrhages had no connection with it, or with the interior of the uterus. The diminution of hemorrhage in the latter stages, was probably more owing to finding a diverticulum in the placenta, than to the astringents and other remedies used, though doubtless the remedies were of service to her general condition.

None of her medical attendants here had any hope of saving the patient's life, notwithstanding the wonderful cures on record. When near term, the whole disk of the os uteri was too much implicated, to suppose that nature could throw off a living child, as in a case recorded by Dr. Ramsbotham, through a partial rent, an accident which the mother survived, though living in great misery for fourteen months. Our patient possibly might have been spared some days of suffering, if we had made incisions into the indurated texture, but on the other hand, also, the incisions might have hurried the fatal issue.

As to the proper treatment of cases where there is such a mass of disease, it is my conviction that we should resort, during the ninth month, while the child is yet living, to the Cæsarean operation. Both science and humanity seem to demand it. I read but the other day an article by M. Duclos, in the *Annuaire de Médecine*, &c., for 1858, taken from the *Revue Médicale*, recording a case of successful operation, in which both mother and child were saved, where a real or supposed *fibrous* tumour of the womb, obstructed or filled the passage through the pelvis.

And, as another evidence of this view, I introduce here the following paragraph from Dr. Churchill's *Diseases of Women* (Am. edition of 1857, edited by Dr. Condie, page 296).

"Dr. Oldham has related five cases in which pregnancy existed with open cancer, but whether pregnancy preceded the ulceration is not clear. One was fatal from rupture of the uterus, the second required craniotomy, and the third died exhausted six weeks after delivery. In a fourth case, he placed the patient under the use of chloroform, at the commencement of labour, and as, from the size of the cancerous mass, it was evident the child could not pass *per vias naturales*, he performed the Cæsarean section, and saved the child. Strange to say, the wound healed, and the mother recovered from the operation. A fifth died undelivered."

Facts such as these would certainly be a sufficient warrant for the Cæsarean section; and I do not think it is too much to say that, under such formidable circumstances, it is imperatively demanded.

CASE II. *Death of a New-Born Infant from Spontaneous Hemorrhage.*—On the 28th of June last I attended an officer's lady, who had been living at a military post in Texas, for some years, in her third confinement. She had but recently arrived in this city, and her general condition was very unpromising. She was feeble, prostrate, nervous, and unable to move herself from one side of the bed to the other. On the 22d, she was taken with severe pains and hemorrhage, and there was a daily discharge of blood up to the time of delivery. The hemorrhagic tendency in her case was so well marked, that after the birth of the child, I paid particular attention to the condition of the womb; gave the fluid extract of ergot, made suitable frictions; used compress and binder, and withal, stood by her until her condition became comparatively safe. She had cold extremities and nervous chills after the labour was over, which I combated with valerian and paregoric. My attention was not particularly directed to the child; it appeared rather feeble at birth, and consequently, I delayed tying the cord longer than usual. Before bedtime I called, and found the lady pretty comfortable, but was informed that the child had been moaning, and had refused to take the breast. The nurse had given it a little sugar and water, and it had vomited mucus, stained with blood. It had passed urine and meconium. I told the nurse she might give it a little catnip tea, which is the panacea here for all the ills that young babies are subject to. In the night I was called to see it, by its father, who told me it was either dead or dying. I saw it about two o'clock, but it had died at one. I tried Dr. Hall's ready method, and in turning it upon its face, there flowed from its mouth a discharge of thin blood, or bloody serum. Life was totally extinct.

What caused this hemorrhage? Spanæmia, undoubtedly; but whence the spanæmia? Clearly from the condition of the mother. This lady had been living for two years or more in an enervating climate, at a barren and desolate outpost, where the troops, officers, and men, subsisted on the army rations. The food was too coarse for her, and she lived, as she told me, almost exclusively on bread and butter, and water, and none of these of the best. Occasionally, indeed, some few luxuries were obtained with difficulty from the seaboard, but they made no part of the regular diet.

Viewing all the facts, I considered that the child died of SCURVY, and, in fact, upon inquiry, I found that both officers and men had experienced something of that disease at the same station.

The lady—though she had passed eleven years since giving birth to her last preceding child—had, under the circumstances, with some transient drawbacks, a good recovery, and regained, in a few months, a high condition of health, and with it courage enough to return with her husband to the field of his duty.

ART. VIII.—*Exsection of the Entire Fibula for Fibro-Cartilaginous Degeneration of the Bone.* By A. REEVES JACKSON, M.D., of Stroudsburg, Pa.

IT is believed that the following case is the only one on record in which either of the bones of the leg has been *entirely* excised. It is remarkable, also, as exemplifying with regard to the lower extremity what has been shown, by recent operations of Prof. J. M. Carnochan, published in previous numbers of this journal, to be true respecting the bones of the forearm, viz: that in some instances the long bones may be entirely removed without serious loss of function of the limb and corresponding joints.

In the leg it is commonly the tibia that forms the subject of such diseases as require excision; and as that bone is the one that enters into the formation of the knee and ankle-joints, and upon whose broad, articulating surfaces the weight of the body is sustained, obviously the entire excision of it could not be performed without leaving the patient a hopeless cripple, with a perfectly useless limb, and in a far worse condition than after amputation.

The present case, however, shows most conclusively that the fibula, which is comparatively an unimportant bone, may, when so seriously and extensively diseased as to demand it, be entirely removed, and the patient left with a useful member, whose functions are but slightly impaired.

History.—Mrs. R., thirty-seven years of age, the wife of a farmer, and the mother of four children, noticed some time during the month of May, 1849, a painless swelling of the outer side of the calf of the right leg, about four or five inches below the knee-joint. The enlargement slowly increased, and extended itself upwards and downwards towards the knee and ankle joints. The right foot and lower part of the leg became œdematous, and she walked with a slight limp which she attributed to weakness of the part. Her general health continued unimpaired. She attended to her ordinary household duties until the early part of September, when, in stepping down stairs she felt "something give way," and fell to the bottom. She was now unable to walk, and for the first time applied for medical assistance.

Dr. G. A. Kaski, of Bartonsville, Pa., was sent for, who, after attending the case a few days, and ascertaining its unusual character, requested my attendance in consultation.

Accordingly, we saw her together on the 19th September. On examination we found the leg much swollen, painful on pressure, and the foot considerably everted. There seemed to be evident fracture of the fibula, although not the least crepitus could be produced. The leg was lightly dressed with splints and bandages, and cooling applications ordered to be applied.

I saw nothing more of the case for nearly three months, when I was again requested by Dr. Kaski to see her.

At this time (Dec. 10th) the leg was much more enlarged, and the patient complained more of pain. The splints and bandages had been dispensed with for several weeks, owing to the irritation of the integuments which they produced. The eversion of the foot was still more marked than before. The general condition of the patient was indeed lamentable. She was greatly emaciated, although she did not present the appearances of a person suffering from malignant disease. Extensive ulcerations had occurred over the hips and sacrum, resulting from her long confinement to bed, and the discharges from which had seriously drained her system. There was much œdema of the parts about the ankle, foot, and on the fibular aspect of the leg. No fluctuation could be detected at any point.

Her condition was now such as to render it clear that something must soon be done for her relief, or that she would sink from exhaustion. Amputation of the limb had already been suggested to her, but to this measure the patient as well as her friends firmly objected. Excision of the affected bone was now proposed, and the nature of the operation having been explained to her, she consented to have it done. It was accordingly decided to excise the bone on the following Monday. In the mean time, she was put upon a course of tonic treatment, and the use of the most nourishing diet enjoined upon her.

Operation.—The operation was performed December 22, 1849, in the presence and with the assistance of Drs. Kaski and Foss, and Messrs. Kübler and Shick.

The patient having been put fully under the influence of chloroform, the leg was partly flexed, and a longitudinal incision made, commencing about a half inch above, and an inch in front of the head of the fibula, and extended downward to the external malleolus, dividing the skin and peroneii muscles. A second incision, starting from the same point as the first, was made transversely, and carried directly backwards about two inches. The flap thus formed was rapidly dissected off from the bone (or rather what was formerly bone) until the upper four inches were fully exposed. I now made an attempt to detach the head of the bone from its tibial articulation, but found it a very difficult proceeding. However, the substance representing the fibula, flexible and much thickened, was finally separated by passing a narrow-bladed bistoury between it and the tibia, the edges of the wound being held widely apart, at the same time, by an assistant with blunt hooks. Great care was necessary at this stage of the proceedings in order to avoid wounding the anterior tibial nerve, which was here seen passing down.

The upper portion, being now detached, was drawn outwards and made use of as a lever to aid in separating the remainder. Seizing it with the left hand for this purpose, the fibres of the peroneus longus and the interosseous ligament were divided, the knife being kept close to the bone. In this manner, it was also separated from its connections with the soleus and the flexor longus pollicis pedis. Proceeding downwards, I found the attachments of the muscles and the interosseous ligament to the bone were so slight about its middle third, that they were readily separated by the handle of the knife. At one point there was scarcely any vestige of bone remaining.

The most difficult part of the operation consisted in removing the lower end of the bone from its attachments to the fasciculi of the external lateral ligament of the ankle-joint and the several short ligamentous attachments to the tibia. It was finally accomplished, however, by making a third incision, perpendicular to the first at its lower end, about an inch and a half long, and dissecting the flaps carefully back; then by pulling the diseased mass strongly outward, sufficient space was obtained for dividing the connections with a slender knife. Care was taken to avoid injuring the small slip of synovial membrane which is here sent up between the tibia and fibula from the ankle-joint.

The tibia and astragalus were both found to be unaffected by disease.

There was very little arterial hemorrhage throughout the operation. The peroneal artery, which was the only one of great size that was really in danger, was carefully avoided. Some of the anastomosing branches of the anterior and posterior peroneal arteries were cut, but torsion being applied to them, the bleeding soon ceased. The venous and capillary bleeding was troublesome for a time, but finally ceased under the application of pressure and the use of cold water.

Dressing and Progress of Cure.—The edges of the wound were brought together and retained by several points of interrupted suture and adhesive straps, the whole being covered lightly with a roller bandage. A well-padded splint, four inches wide, and extending from a short distance above the knee-joint to four or five inches below the foot, was placed along the tibial aspect of the limb, and confined by a few turns of the roller above the knee and to the foot, in such a manner as to draw the sole of the foot more nearly to its natural position. Cold water dressing was then ordered, to be kept constantly applied to the wound. A full dose of morph. sulph. was given at bedtime.

The sutures were removed on the third day, at which time union was found to have occurred throughout the greater part of the wound. The patient was kept upon the use of tonics, and a full diet allowed. The subsequent progress of the case was entirely satisfactory; and at the end of three weeks the patient was able to sit upon a chair with the foot and leg resting upon an elevated cushion. In two and a half months, she was able to walk with a cane, by the aid of a stout gaiter-shoe, to the sole of which was attached a steel plate three-fourths of an inch wide and one-eighth of an inch thick, which, being applied to the outer side of the limb, extended upwards to a point opposite the tibio-fibular articulation, and the upper end, being well padded, was secured by a broad strip of ferreting passed around the leg below the knee. This apparatus she used for about two years, when she at length threw it aside, and ever since has merely used a cane.

Functions of the Leg and Foot.—She walks with a slight limp, bearing the weight of the body upon the inner side of the foot, the sole of which is considerably everted. Owing to the detachment of the biceps muscle, she has no power to evert the leg when in a semi-flexed position. The soleus, however, continues to act from its tibial attachment. There is a tendency in the foot to be partially flexed from the detachment of the peroneus longus and peroneus brevis, those muscles being extensors of the foot, and antagonistic to the tibialis anticus and peroneus tertius, which flex the foot. The motion at the ankle-joint is somewhat impaired, owing, perhaps, to the long-continued eversion of the foot and the consequent side-pressure on the joint.

Appearance and Pathological Condition of the Bone.—It is thickened throughout its entire extent, but most so about the middle and upper extremity. At the largest point it measures five and three quarter inches in circumference. It is of yellowish-white colour, in consistence rather softer than cartilage, and thickly studded with osseous spiculæ imbedded in a dense, elastic, fibrous tissue. Its external surface is rough and irregular, and presents numerous small cavities of varying size. The periosteum is entirely removed from the posterior surface of the upper half of the bone, and, although still present on some parts of the anterior surface, it is much thickened and softened. At one point there is no bone whatever for a distance of an inch and a half, the upper and lower extremities being held together merely by a few shreds of periosteum. The lower part of the bone is tolerably firm, enlarged to about twice its normal size, and the periosteal investment unaltered. The interior of the bone, however, is softened, and degeneration of the tissue considerably advanced.

ART. IX.—*Dynamoscopy.* By J. M. F. GASTON, M. D., Columbia, S. C.

IN an article translated from the *Journ. de Méd. et de Chirurg. Prat.* in the *Charleston Med. Journal* for May last, on the subject of dynamoscopy, this language occurs: "We have now to announce another application of the aural sense to the diagnosis of disease; but in this service the stethoscope does not only inform the practitioner of the general state of his patient; it becomes, in addition, an important means of investigation in a host of special cases, and opens the door to a kind of exploration hitherto entirely unknown."

The process of investigation is subsequently spoken of as a discovery of M. Collongues, and the reader is left to infer that the data upon which he proceeds were not previously known to the profession. While I admire the zeal which is manifested in undertaking to analyze and systematize the various indications which may be presented in health and disease, it is due to science and to our country to have it understood that the basis of this discovery may be found in an edition of *Horner's Anatomy* as long ago as 1843, and doubtless earlier, as this is the sixth edition of the work. On page 363 of vol. i., near the bottom, we read the following: "It is owing to the vibratory motion in the fibres of a muscle during their contraction that a rustling is heard in the application of the stethoscope to them. The hollow, distant rumbling when the meatus externus is closed by the finger is owing to the same vibration in the muscles of the finger employed. This is readily proved by the following experiment: Close the meatus with the end of the handle of an awl or a fork pressed against it by the finger, and it will be found that the muscular vibrations are continued along the instrument; plant afterwards the point of the instrument upon a soft, inelastic substance, so as to make, in that way, the closure of the meatus, and the rumbling will instantly cease."

Those who have read the article on the dynamoscope will at once perceive that all the points, as to the data of investigation, are clearly and definitely presented above in the extract from Dr. Horner's work, and to him belongs the originality or priority in detecting these phenomena, and even suggesting, by the awl-handle, the mode of investigating them which is now proposed.

We are none the less indebted to M. Collongues for the practical use which he proposes to make of the signs of organic action as revealed by this process, and it is much to be desired that his investigations may be continued. To impart a correct impression to the reader it will be necessary to transcribe the following statement touching the investigations of M. Collongues.

"The basis of the discovery is as follows: When one places in his ear the finger of a sick or a well person, he hears immediately a certain buzzing, which varies in character according to the physical condition of the individual. With this noise is heard, at irregular intervals, a sort of crisping sound that the author calls crackling or shrivelling. These buzzings and cracklings are evidently produced by the person whose finger is inserted into your ear, for if, instead of the finger of a living being you put that of a corpse or some inanimate body, you will hear nothing. Now, these sounds of a character constantly varying, it is the office of dynamoscopy to investigate, and though the science is of very recent origin, it may acquire in future very great importance. The author has already established that, in the normal state, the buzzing, &c., is slow, continuous, and equal, and that, on the contrary, it is, in the pathological state, rapid, strong, and unrestrained. When it is tremulous, unequal, now sharp, now deep, it indicates a seriously morbid state, and the case is still worse when the buzzing becomes intermittent. When the extremity of the finger, introduced into the ear, gives rise to no buzzing, it is an index of approaching death, except, of course, in cases of epilepsy, catalepsy, apoplexy, &c., when the noise ceases, to reappear with returning consciousness."

"M. Collongues, having remarked that the buzzings were more sensible when a solid body, such as wood or steel, was interposed between the finger and the auditory canal, conceived an instrument to which he gave the name of dynamoscope, and by aid of which his new mode of auscultation may be applied to all parts of the body. By this means, he has established that the cracklings are heard only at the extremities of the fingers and toes, that the buzzings vary in different localities of the body, and that, on the death of the subject, they cease in the extremities some time before disappearing from the belly and chest. It is twelve to fifteen hours after dissolution ere the noise is entirely lost; after that time, the dynamoscope, applied upon any part of the body, gives no more evidence of sound than if tested upon any other inert mass of inorganic matter."

It is to be regretted that nothing more specific appears as to the intensity or feebleness of these sounds in an inflammatory or excited state of the organization contradistinguished from an anæmic or depressed condition of the system. The most important features of these sounds must have reference to the sthenic and asthenic phases of life, and while the extremes of these opposite states are very clearly defined and well understood, it is very desirable to have some clearer insight to the distinction between their near approaches to each other, and such, we trust, may be presented in these signs. The inquiries should be directed especially to this end until they lead to some useful diagnostic indications.

In the translation before us, no intimation is given of the views of the author as to the source of the sounds, and we are left with Dr. Horner's explanation based on muscular vibrations, which, to my mind, is not satisfactory. First, because the sounds are greatest where there is least muscular development, viz: at the extremities of the fingers and toes; and second, that the parts may be kept in a state of complete immobility for any length of time without lessening the sounds, and hence I infer they do not result from muscular activity in any shape whatever.

There is an explanation of these sounds, which I ask to present to the consideration of the medical philosopher, and to the careful investigation of the physiologist.

In an article entitled "A Criterion for Stimulants," which was published with the *Transactions of the South Carolina Medical Association* for 1855, I took the position that the capillaries serve an important part in facilitating the passage of the vital fluid, and I considered the relative promptness with which this portion of the circulation performed its office in different conditions of the system, maintaining that the promptness or delay of return of colour after pressure upon a part, was an index to the tone of the capillaries, and then to the general organization. This view has been corroborated by farther observation, and leads me now to submit to the public my impression that the sounds detected by placing the ends of the fingers in the ear, and also noticed in other parts of the frame, ensue from the passage of the blood through the capillary vessels, which are, of course, distributed chiefly at the extremities, where the arteries cease and the veins are developed to return the blood. To test the matter, I enveloped the extremity of my index finger with collodion, thus constricting it so as to produce painful tightness, and upon placing it in my ear the sound, which had previously been very perceptible, was almost entirely absent. Any one who tries this simple experiment will perceive at once the great difference produced by the arrest of the circulation in the extremity of the finger from this uniformly tight bandage, and will be prepared to appreciate my reasoning on this point, in tracing the absence of sound to the absence of capillary circulation.

In illustration it may be mentioned that in varicose aneurism a sound results from the passage of the arterial blood into the venous circulation, and indeed any fluid which is forced from a vessel through a channel or channels of smaller calibre, moves for the time being with so much greater speed and friction as to favour the idea of an audible movement amongst its particles. The passage, also, from one medium to another by force always is attended with sound, and we must advert specially to the sudden transition in this respect which occurs through the tubular network of the capillaries. It is known to all that the composition of arterial and venous blood differs in so much as to be readily detected even by the eye, and must, therefore, present as it were different media, between which a connection is established and maintained by the capillaries. Before entering the heart again, the venous trunks collect into two main channels, and the blood is conveyed through the right ventricle to the lungs to be renovated; and here again we discover sounds which have been referred to the entrance of the air into the bronchial tubules. That some portion of these sounds may result from the passage of the blood through the capillary network of the pulmonary tissue is not improbable, and demands a thorough investigation. The cause of the sounds which result from the heart's action is involved in so much controversy as to throw no light upon our subject, and indeed these are not such points of comparison as to afford much assistance even were these sounds accurately understood. But it is known that in the passage of the blood through this organ, sounds do emanate from it; and in so far, a presumption is raised in favour of the explanation I have proposed, of the sounds at the ends of the fingers and on other parts of the body.

It is not my province to enter upon any analogical course of reasoning, but there are many things in connection with the ordinary processes in the acts illustrating the fact that when the space through which a fluid passes is suddenly contracted and again enlarged, it gives rise to a sinuous movement, and I would simply refer the reader to a consideration of these facts as throwing some light on the subject before us.

This whole matter may be viewed by some as an impracticable undertaking, but when it is remembered that the vital phenomena, which go to make up the indications of the various states and conditions of the organization, are not by any means fully understood, and that every feature which can be presented tends to elucidate the laws of health and disease, it does not become the scientific explorer to shut his eyes to such peculiar facts as those about which dynamoscopy treats. In the paper to which allusion is above made, I undertook to show the importance of the capillary system as an index to the nervous system and the general circulatory system, and if it should appear upon farther investigation that we have, through the sounds, given out at the extremities a guide in deciding upon the state of the capillaries, it must very materially aid our explanations of the diseases involving the vital powers generally. We very much need some additional data in this class of cases, and the congestive and nervous elements of disease will be shorn of their obscurity if we come to understand properly the modifications of the capillary circulation. If the slowness in the return of colour after pressure upon a part is found to correspond with a very feeble sound at the extremities, they will afford a very strong corroboration of the indications of the pulse and the sense of prostration, which will enable the practitioner to decide most indubitably upon the use of stimulants. On the other hand, if there is more than ordinary sound at the extremities, accompanied with speedy return of colour upon pressure, and we find a strong pulse with general excitement, depletion will be indicated. Without such concurrent evidence of the true condition, it is well known to every practitioner how liable the symptoms of excitement or depression are to be misconstrued, and tentative bloodletting or a tentative resort to stimulants are consequently in common use in lieu of the indications which we may now receive through the capillary circulation.

As my former article, suggesting a criterion for stimulants, was noticed in the review department of this journal, I would present this additional element in the same train of phenomena, and trust it may lead to farther investigation of the vital forces.

ART. X.—*Two Successful Cases of Ovariotomy by the Large Abdominal Section.* By E. R. PEASLEE, A. M., M. D., Prof. of Surgery, &c.

CASE I.—Miss Susan K. Russell, of Oxford, Maine, aged 39, a tall, slender woman, of light complexion and delicate constitution, was first seen by me on the 3d of April, 1856. During the winter and spring of 1854, the urine had been scanty, the left iliac region had become painful, and a swelling appeared there in April of that year. In July, she applied to an irregular practitioner professing to cure dropsy; but being only debilitated by his medicines, she, in August, consulted Dr. Lamb, of Lawrence, Mass., who discovered she had an ovarian tumour, and advised her to enter the Massachusetts General Hospital, Boston. This she did on the 4th of September, under the care of Drs. Perry and Bigelow. She was there tapped, for the first time, in September, when about eight pounds of fluid, she thinks, were removed. Not receiving encouragement to remain longer at the hospital, she left at the end of about three months, and subsequently tried homœopathy and various popular remedies, to no purpose, till May, 1855. On the 15th of that month, she was tapped for the second time, by Dr. A. L. Hersey, of Oxford, Maine, and fourteen pounds more of fluid removed. The operation had been performed eight times in all by Dr. H. before the ensuing April; the fluid amounting to from thirty to forty pounds at the last tappings. The whole amount of fluid obtained by the eight tappings was 257 pounds.

On the 3d of April, 1856, I found the patient very much emaciated, and confined to her bed by debility; without appetite, and with a sallow, dry, and shrivelled condition of the skin. The catamenial secretion had not appeared for nearly ten months. The circumference of the abdomen was forty-eight inches, and the tumour was evidently multilocular. On performing the operation of paracentesis, preliminary to settling the question of the propriety of removing the mass, by the large abdominal section, thirty-four pounds of fluid were removed from the two larger sacs; and the mass could then be moved somewhat in the cavity of the abdomen. I decided that the *left* ovary was diseased, and that there were extensive adhesions of the tumour to the parietal peritoneum; but as the patient had declined rapidly during the last three months—though she had always been tapped as soon as the fluid had reaccumulated so as to interfere with the respiration—and as she was of a hopeful temperament, I decided to give her the only remaining chance of living, even one month longer, as it seemed to me, by performing the operation of ovariotomy.

She was accordingly brought to Brunswick, Me.; and on the 19th of April, her circumference being forty-eight inches, I tapped her, removing thirty-seven pounds of a brownish fluid. It had accumulated since the last tapping, at the rate of over two and a quarter pounds per day. She continued very comfortable till the 23d of April, when the tumour itself was removed. Thirty hours previously to the operation, the bowels had been freely evacuated by castor oil; and only milk-porridge had subsequently been allowed as nourishment.

Operation.—The atmosphere of the room was rendered moist by the evaporation of water, and kept at a temperature of 80° Fahr. The bladder was evacuated, the pudenda shaved, and a sheet applied as a diaper. The patient was placed on a table, with the head and chest elevated; and the operation was performed in the presence of Dr. W. V. Wheaton, U. S. Army, Drs. Lincoln and Palmer, of Brunswick, Dr. Tewksbury, of Portland, Dr. Hersey, of Oxford, and my assistants, Drs. C. P. Frost and Wm. Hunter.

The circumference of the abdomen was now thirty-six inches.

The patient being under the influence of sulphuric ether, an incision was made through the abdominal walls, eight inches long, from the level of the umbilicus to the symphysis pubis; no hemorrhage occurring except from a small vein in the rectus muscle, which was ligated to avoid any delay from the oozing of blood. The tumor was found to be firmly *adherent everywhere anteriorly*, above the level of the umbilicus; and by strong bands, also, to the stomach, the omentum, and the right iliac fossa. Commencing, however, below the umbilicus, the hand, previously immersed in the artificial serum[1] (at a blood heat) used in my former operations, was introduced, and forced up between the tumour and the parietal peritoneum, thus *tearing* away the adhesions. This was effected slowly, since, in most of their extent, my whole strength was repeatedly applied before accomplishing the object. I attempted to separate the adhesions at their inner extremity (that in contact with the tumour) in every part, so that if any hemorrhage ensued, the bleeding vessels could be easily ligated. No ligature was, however, required, though for a few minutes there was a general oozing of blood over the whole surface. Next, the tumour was lifted out of the abdomen, and a double ligature of four threads of saddler's silk, waxed, but not twisted, was passed through the middle of the pedicle; each portion was tightly tied round its respective half of it, and the latter was then divided. The pedicle, before division, was seven inches wide, and one-quarter of an inch thick through the outer half of its extent;

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[1] Composed of water Oiv; albumen (white of eggs) ℥vj; and common salt ʒiv. See this journal, Jan., 1856, pp. 52 and 57.

but it was so short that the ligature, when tied, came in contact with the tumour. I therefore cut it through to the substance of the tumour (the sac), on both sides of the latter, at the distance of one-third of an inch from the ligatures, and dissected out the lower portion of the tumour from between the two layers of the pedicle. The pulse became almost imperceptible, the instant the ligatures were tightened, but it soon rallied again. The tumour weighed eleven pounds; ten pounds of fluid were found in the cavity of the peritoneum, and two pounds more escaped without being measured, as was estimated. In structure, the tumour was so nearly identical with those removed in my first operations of this kind,[1] being a mass of sacs, containing fluids of different shades, that I will not describe it here. It is preserved in the museum of the Medical School of Maine.

Great care was taken to remove all the clots of blood and the remaining fluid from the pelvis. This was done with a fine sponge, and required at least twenty minutes for its accomplishment; and while effecting it, the hands were kept constantly moistened with the *artificial serum* before mentioned. This was also constantly used during the operation, after the peritoneal cavity was laid open, in order, if possible, entirely to prevent the actual contact of it with the air.

The incision was now closed by nine needles and six sutures (in as many spaces between the needles); straps of adhesive plaster were applied across the abdomen; the two ligatures were brought out below the lowest needle, at the end of the incision; a compress, wrung in blood-warm water, was applied, and covered with oiled silk; and the patient was put into bed at 5½ P. M., two hours after she was placed on the table. More than three-fourths of the time had been consumed, 1, in etherization (11 oz. of ether having been used); 2, in tearing the adhesions; and 3, in removing the blood from among the convolutions of the intestines, and especially in the pelvis. She is now pale, and the pulse is 120 and very feeble. The temperature of the room is to be kept at 70° to 75° (Fahr.); none but the water-dressing is to be applied, this being changed once in six hours; panada, milk-porridge, or broth, for nourishment; and stimulants and opiates to be given as may be required; the patient not to speak aloud; and the catheter to be used once in six hours. My pupils, Drs. Frost, Hunter, Grant, and Lincoln, now, in turn, remained in the house with the patient during the first few days after the operation; and from their hourly records, I extract the following account of her progress:—

At 6 P. M., she is becoming warm; appears natural, though the effects of the ether are not quite gone; and has pain in lower part of abdomen. Gave ℥ij brandy in warm water (to be repeated every half hour), and 40 drops of McMunn's elixir of opium.

8 o'clock. Still has some pain; relieved by being turned a little to left side; feels tired; there is some bronchial irritation, with tendency to cough, probably due to the ether; a teaspoonful of water at intervals, and 15 drops more of the elix. opii.

9 o'clock. Drew two ounces of urine, natural; pulse 110; she is in a gentle perspiration; reaction seems established. No effect of elix. opii; gave 25 drops more, and ℥j brandy.

12 (*midnight*). Pulse 112; respiration 23; has fallen asleep momentarily a few times. Very little pain. 2 o'clock A. M. Has slept well a few minutes; is cheerful; there is some pain in left hypochondrium (at the seat of some strong adhesions). 3 o'clock. Drew three ounces of normal urine.

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[1] See the No. of this journal for April, 1851, page 382.

1st day after operation. 6. A.M. Pulse 120; respiration 23; pain through the back and hip; has some desire for food, and has taken some cracker tea. 7 o'clock. Gave 30 drops elix. opii. At 9 A.M., drew ℥iij urine, high coloured; expression of countenance good; she is inclined to sleep. 10 o'clock. Pulse 128, and quick; respiration 26; feels faint, and has a desire for food; some eructation of gas from stomach. 11 o'clock. Troubled by gas in the stomach; respiration still 26; has slept some, but not quietly.

1 o'clock P.M. Pulse 128, fuller; respiration 26; countenance fairer than before operation; skin moist, but warm; there is pain in left iliac region (seat of ligature); gave 40 drops elix. opii. Urine ℥ij, at 2½ o'clock; less pain since. 4 o'clock. Pulse 124; respiration 25; feels comfortable; has passed some urine involuntarily; has taken ice water and cracker tea. 5 o'clock. Ordered mucilaginous drink.

6¾ o'clock P.M. ℥ij high-coloured urine. 8 o'clock. Has slept three-fourths of an hour; pulse 122, and less compressible; respiration 24; no pain; skin cool and moist; she feels faint. 9¼ o'clock. Urine ℥j; introduction of catheter is painful. At 10 o'clock, 40 drops elixir opii.

1¼ o'clock A.M. Has slept most of the time since 10 o'clock, half an hour at a time, and feels much refreshed; pulse 120; respiration 26; skin moist and warm; slight change of position relieves feeling of fatigue; has taken only cracker water and mucilage of gum Arabic; warm drink agrees best. Had severe pain at 2 A.M. Gave 4 drops aqua ammoniæ dilut., and 30 drops elix. opii. Urine ℥iiiss, at 3 A.M., lighter coloured; slept one hour continuously; "feels finely."

2d day after operation. 7 A.M. Urine ℥ij; still very comfortable. 8½ o'clock. Pulse 108, softer; respiration 20; skin natural. 10 o'clock. Urine ℥iss, high-coloured; has taken ℥ss beef tea. 12 (*noon*). Pulse 104; respiration 24; has slept three-fourths of an hour; everything favourable. At 3½ P.M., urine ℥iij; has taken ℥ij beef tea since 10 A.M.; feels exhausted, and is inclined to sleep; countenance not so good. At 4½, still more exhausted; pulse weaker; gave brandy ʒj, with aqua ammoniæ gtt. v, and beef tea ℥ss. Pulse improved, at 6½ P.M., and skin moist; countenance no better. At 9½ in the evening, pulse 110, stronger; gave ℥ij beef tea. Complained afterwards of wind in the stomach, and pain in the abdomen; gave ʒss each of brandy and elix. opii; is soon relieved. 1 o'clock in the morning. Has slept most of the last two hours, and is much refreshed; calls for beef tea, ℥iss; urine ℥iij. 4 A.M. Has slept most of last hour.

3d day after operation. 7 A.M. Urine ℥ij, normal; wanted more beef tea. 9 A.M. Pulse 102, good; respiration 20, natural; chewed some beef-steak, with a good relish; is quite lively and cheerful. The whole incision has united by first intention. 1 P.M. Urine ℥iijss; has complained of pain in the wound; some fulness of abdomen, above the umbilicus; gtt. xxv elix. opii brought relief of pain. 3 o'clock P.M. Pain returned; gtt. x elix. opii; beef tea hourly. Urine ℥iijss, at 5 o'clock. 6 P.M. Still has pain; elix. opii, gtt. xxxv; has passed urine involuntarily, with relief. 10 P.M. Beef tea ℥ijss. At 11, is restless; elix. opii, gtt. xxv. At *midnight*, urine ℥iss, turbid. At 4½, urine ℥ijss; beef tea and brandy freely, through the night.

April 27. *4th day.* 8 A.M. Pulse 104, feeble; gave more brandy. At 10 A.M., pulse 110; she was removed to a sofa for an hour. At 1 P.M., urine ℥ijss. At 2 and 3½ P.M., gave milk-porridge ℥ij. At 4 P.M., urine expelled involuntarily; pain in region of bladder; gave 25 drops elix. opii. At 8 P.M., urine ℥iv. 9 P.M. Free from pain; pulse good, 106. 10½

P. M. Urine ℥ij; she has slept one hour and a half; has taken the milk-porridge freely. 3 A. M. Pulse 108; some pain in the abdomen; elix. opii, gtt. xx. Urine ℥iij, at 4½ A. M. At 7½ A. M., urine passed involuntarily.

28th. *5th day.* 9 A. M. Urine ℥iss, passed voluntarily; pulse 124; respiration 20; is very comfortable. 12 o'clock (*noon*). Pulse 100; urine drawn ℥ij, and at 4 P. M., ℥iij; has slept two hours this P. M. 6½ o'clock. Urine ℥ijss, and at 8, as much more. Considerable drawing pain is felt at the lower part of the external wound. At 9½ P. M., 50 drops elix. opii. Urine ℥ij, at 11 P. M. Pulse not over 108 to-day; has had but ℥j brandy. 12 (*midnight*). Urine ℥ijss; has had no pain, and has slept most of the time. 4 A. M. Urine ℥iij.

29th. *6th day.* 6½ A. M. Urine ℥ijss; pulse 102; she is very comfortable. At 10½, pulse 98. At 11, ℥ijss turbid urine. 2 P. M. Urine ℥ij. 3½ P. M. Same pain as yesterday; 25 drops elix. opii. At 4, urine ℥ij, and as much at 6, when the pain at once ceased. At 10 P. M., urine ℥iij; pulse 106 (the most rapid to-day); respiration 20. 12 (*midnight*). Pulse 112; has slept well. At 2 A. M., urine ℥iij; 25 drops elix. opii. At 4 A. M., urine ℥ij.

30th. *7th day.* Pulse 102; has had a good night, and is decidedly better; urine averaging as yesterday; passed it voluntarily, and did not again require the catheter. This P. M., two of the needles were removed, and two of the sutures, which were suppurating. At 5, an enema of soap and water was administered, which returned without effect; some irritation of bladder afterwards, till 3 A. M., when 65 drops elix. opii had been given in three doses. The constant attendance of my assistants ceased from this time.

May 1. *8th day after operation.* The best day yet. Removed five more needles and two sutures; is taking eggs with wine. 7½ P. M. 30 drops elix. opii.

2d. *9th day.* Had a free spontaneous alvine evacuation at 4 A. M. Has had some soreness of the mouth the last two days. Removed the remaining two needles and two sutures, this P. M. Another alvine evacuation, at 4 P. M., followed by some exhaustion; pulse 88; respiration 20; is in a gentle perspiration; ordered milk-porridge with rice. 9 P. M. Feels some stronger; a solution of tannic acid (ʒss) in glycerine (℥j), for the aphthous state of the mouth.

3d. *10th day.* Is better; pulse 88 at 2 P. M.; has had oyster-broth; quinæ sulph. (gr. j) and port wine (ʒij) every four hours; comfortable through the day; took an enema at night, which operated freely, but made her restless till elix. opii, 25 drops, were given.

4th. *11th day.* Pulse 92; much stronger and better; beefsteak and potato for breakfast; all appears right; had a spontaneous alvine evacuation.

5th. *12th day.* Slept well through last night; perspired considerably; took no opium; diet as yesterday; pulse in the morning 82; has some pain at the lower part of the abdomen, and mouth is still somewhat sore; some pus had accumulated under the lowest strap and around the two ligatures; took 48 drops elix. opii to-night in two doses.

6th. *13th day.* Pulse 80; mouth better; free suppuration round the two ligatures; at 9 P. M., a considerable quantity of pus was removed from the points made by the needles, and from around the ligatures.

7th. *14th day.* Very well, as yesterday; some three or four ounces of purulent matter are to-day discharged from an abscess by the side of the ligatures, where it had for three days formed a swelling; she is very cheerful; pulse 92.

8th. *15th day.* Slight discharge from the abscess to-day; she is better in all respects; pulse 92; tongue for the first time clear; appetite improving.

9th. 16*th day.* Discharge slight, and of true pus; in all respects as yesterday.

10th to 14th, inclusive. She has had comfortable nights without the opiate, and a good appetite; the discharge from the abscess diminished daily, and ceased in ten days. Meantime, however, another small abscess had formed an inch and a half above the ligatures on the middle line, and discharged for two days. A third also, smaller, subsequently appeared above this; there is a regular daily alvine discharge. From the 9th to the 13th, a crop of sudamina covered the surface on the abdomen over which the plasters had been applied; the pulse has been from 84 to 76.

15th. 22*d day.* Sat up a few minutes for the first time. To take one pil. rhei comp., and which was repeated the next morning. She progressed daily until the 24th, when, having had much irritation of the bladder, and a sabulous deposit in the urine, I explored that organ, but found no calculus. Ordered spts. nitri dulcis ʒj every four hours, which gave decided relief in two or three days. On the 29th May (five weeks and one day after the operation), she sat up one-half of the afternoon. She also to-day first rose from the bed without assistance, and stood alone. The ligatures are not yet loosened.

June 4. 39*th day.* Rode out for the first time; is doing well in all respects.

8th. Menstruation commenced and continued five days.

Miss R. returned to Oxford on the 24th of June. On the 13th of July, she reported that another abscess had formed, and discharged very freely, and that she had much soreness and pain in the left iliac region, or "where the ligatures had been applied." She had not been able to sit up all the time, and the ligatures had not yet come away. She subsequently wrote that the first ligature came away on the 30th of July, and the other on the 26th of August, the latter (which inclosed the thicker half of the pedicle) *without any loop.* Some discharge around them had continued until the day on which the last came away.

She subsequently gained more rapidly in health and strength, but could not exercise much up to the 24th of September; when, also, there was still some tenderness in the left iliac region.

She called on me in April, 1857, one year after the operation, and I was surprised at her appearance of perfect health. The cicatrix of the incision had contracted to five inches. The catamenia have been regular since their return six weeks after the operation. She is still not strong, though constantly gaining in flesh. She, however, soon afterwards resumed her previous occupation as a milliner, and continues in good health, to the present time (Aug. 25, 1858).

Remarks.—I. The result in this case indicates that the operation of ovariotomy is not in itself so dangerous as is generally represented; and my next preceding case, reported in this journal,[1] warrants the same conclusion. The extremely emaciated and debilitated condition of the patient would have promised a tedious recovery, even if the disease could have been removed at once without an operation; and the latter was resorted to as affording the only remaining probability of it. And that condition must be my apology for so minute an account of her progress during the first ten days after the operation.

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[1] See the number for January, 1856.

II. Catheterism was necessitated more frequently than had been anticipated, since the irritation of the bladder demanded more frequent evacuations. This irritation, indeed, was the principal cause of suffering after the operation, and to remove its effects alone the elixir opii was given. It ceased at the end of three weeks and a half, under the use of the spts. nitri dulcis. It was doubtless mainly produced by the ligatures (so near the bladder) and the formation of the abscess which discharged on the fourteenth day. The use of the catheter was discontinued on the seventh day.

III. The pain in the lower part of the abdomen on the twelfth and thirteenth days was also due to the abscess just mentioned. A suspicion at first arose that the latter might be located somehow in contact with the pedicle, and therefore might partially discharge into the peritoneal cavity. But I soon satisfied myself that the matter was formed in the subcutaneous areolar tissue, around and to the left of the ligatures. The two smaller abscesses were also located in the superficial fascia.

IV. The needles and sutures were removed on the seventh, eighth, and ninth days, they having been removed as soon as loosened by the ulcerative process. This would have been earlier established in most cases.

V. An enema was first given on the seventh day, and the first free alvine evacuation occurred on the ninth day. I was deterred from an earlier use of laxative means by a desire to avoid increasing the irritation of the bladder, and in the pelvis generally.

VI. Why were the ligatures retained so long? the first just fourteen weeks, and the last eighteen weeks and five days? Doubtless, the abscess had some instrumentality in this respect. Probably they were caught by granulations after it began to close up, and might have been removed much earlier by slight traction. It is also evident that their retention was a source of irritation and exhaustion to the patient. It is, however, worthy of repetition here that, while the first came off, as usual, with its *loop*, the other, which had inclosed the outer and thickest part of the pedicle, had been *untied.*

Case II.—Mrs. Hannah Holt, aged 27, born in Leicestershire, England, of light complexion, married, and the mother of four children, was first seen by me in consultation with Dr. L. M. Knight, of Franklin N. H., on the 16th of September, 1856. She had first noticed an enlargement in the left iliac region in April, 1855, which gradually increased, and an exhausting menorrhagia ensued. The real nature of her disease was ascertained by Dr. K. in the fall of 1855. In May, 1856, she was for a few days in the Massachusetts General Hospital, but received no encouragement to remain. A variety of medicines administered to reduce the enlargement had no beneficial effect.

The downward pressure of the tumour had of late produced a painful prolapsus of the uterus and the fundus of the bladder; both of which I found protruding from the vagina, though she was constantly confined to her bed. Indeed, it was found impossible completely to return them within the vagina. She was pale; the pulse was 100, small and quick; the tongue was red, and the appetite gone. A large tumour could be felt in the abdomen, apparently surrounded by fluid in the cavity of the peritoneum. The umbilicus was prominent, and the circumference of the abdomen was thirty-six inches.

On tapping the patient, we obtained thirty-four pounds of the usual clear, gelatinous fluid, when it was decided that the remaining unusually solid mass was a diseased left ovary, quite firmly attached at several points by adhesions. The uterus and bladder could now be returned and retained within the vagina. It was estimated that six pounds more of fluid came from the puncture during the twelve hours after the tapping.

As the patient was not yet much reduced in flesh, and would probably soon regain her appetite and strength on the removal of the pressure which had caused her recent suffering, but could expect only constant recurrences of such sufferings till worn out by her disease, and was withal of a very elastic constitution and very hopeful temperament; I deemed this a case in which ovariotomy was justifiable. I therefore advised that if she soon rallied again in all respects, but also soon refilled and suffered again as now, the operation be performed without further delay. All my expectations in these respects having been realized, she came to Hanover, N. H., on the 24th of October; was again tapped on the 26th (twenty pounds of fluid being removed); and the tumour was removed by the large abdominal section on the 28th of October, 1856.

All the preparations of the apartment and the patient were made as in the preceding case (see page 365); and the operation was performed in the presence of Drs. Albert Smith, of Peterboro, J. A Smith, of Hanover, S. G. Wood, of North Enfield, and Messrs. C. P. Frost, E. Blanchard, W. B. Cobb, D. M. Goodwin, and N. S. Goss, medical students.

Operation.—Began to administer the ether at 3 P. M., it producing its effects very slowly, and after free vomiting of bile. On making the incision, eight inches long, through the parietes of the abdomen, several pounds (six pounds, perhaps) of fluid escaped from the peritoneal cavity. The sacs constituting the tumour were so small, that very little in the way of diminishing it could be accomplished by evacuating them. It was firmly adherent above on the right side, and these adhesions were torn away. But at the lower part of the tumour were two adhesions on the left side, and one on the right, so strong as to resist my whole strength in the attempt to tear them; and as they were in the form of tendinous bands, three-quarters to an inch in diameter, I passed a strong double ligature through the centre of each, and tying each of its two portions round one-half of the band, divided the latter. Thus, six ligatures had already been applied. While attempting to tear the adhesions, the substance of the mass itself gave way at one part, and most of the blood lost in the operation (probably about thirty ounces) escaped from its ruptured vessels. The tumour thus cleared was seen to be the left ovary, as had been predicted; and to the pedicle, being but five inches wide, and nowhere more than one-quarter of an inch thick, a double ligature of three threads of saddler's silk was applied as in the preceding case, and the tumour removed.

So much blood had escaped among the convolutions of the alimentary canal, from the stomach to the bottom of the pelvis, that at least three-quarters of an hour were spent in making sure of its entire removal, the exposed surface being all the while kept moist by the free application of the *artificial serum.* The incision was then closed by ten needles and nine interrupted sutures between them, and adhesive straps and the water dressing were applied as in the preceding case. All the ligatures (two for the pedicle and six for the bands divided) were brought out at the lower end of the incision.

The *tumour* removed weighed nine pounds; it being of the areolar variety, or a congeries of small sacs, connected together by a large amount of areolar tissue.[1] Eleven pounds of fluid also were removed from the cavity of the peritoneum at this operation.

The following account of the patient's progress is extracted from the hourly record kept in turn by my pupils, Drs. Frost, Cobb, Goodwin, and Goss.

The patient was placed in bed at 6 P. M. Directions as to nourishment, catheterism, &c., as in preceding case (p. 366). Pulse 120, not very feeble; complains only of thirst; took some brandy and water. At 8 o'clock, reaction was fully established. Took thirty drops elixir opii; is still thirsty; 10 P. M., temperature good. She is pale; complains of thirst; sleeps two to five minutes at a time. Drew urine ℥ij; gave elixir opii fifteen drops. 12 o'clock (*midnight*). Has had some quiet sleep; surface warm; pulse 128; is still thirsty. 2 A. M. Is sleeping quietly; pulse 120; general appearance good. Ten drops elixir opii at 1½ o'clock. 4 A. M. Bright and cheerful; less thirst; no pain; urine ℥iij, concentrated. Has been sleeping five to ten minutes at a time. No brandy since 7 last evening.

October 29, 6 A. M. *Next day after operation.* Is comfortable, and has less thirst; pulse at 10 A. M., 120; complains of the mouth feeling hot; takes small bits of ice; has slept some. 11 A. M. Urine ℥v; troubled by flatulence. Gave five drops aqua ammoniæ every hour; twenty drops elixir opii at 12.

She rested quietly, sleeping most of the time till 3 P. M. The panada to be changed for beef tea. Not much thirst; was distressed at half past 3 by flatulence. There is some tympanites; became nauseated, and vomited a green fluid, which much relieved her. At 6 P. M., is quiet; urine ℥ijss. At 7, pulse 128; a slight heat of the surface. 9½ P. M. Pulse 130; is drowsy; sleeps, though with movements of the extremities, most of the time till 11 o'clock, when the pulse was 128, and she was relieved by the escape of some of the accumulating gas. Tympanites not increased. At 1 A. M., urine ℥iv; Pulse 130; feet cold; warm cloths applied; is again nauseated. Gas raised freely from the stomach with much consequent relief. At 2, no pain or nausea. At 3 A. M., pulse 125; gave ten drops elixir opii; quiet, and sleeps at times till 7½ A. M.; urine ℥iv. The aqua ammoniæ and beef tea had been given at intervals through the night.

30th, 9 A. M. *2d day after operation.* Is quiet and comfortable; pulse 128; slept from 9½ to 10½ A. M. Afterwards distressed by gas in the abdomen; tympanites is increased; gave an enema of warm water f℥iv, containing ol. terebinth. ʒj.

12 (*noon*). Tympanites and distress increasing. She is annoyed by mucus in the throat and tendency to cough. Passed a large rectal bougie *per anum* into the sigmoid flexure, which brought away a considerable amount of gas, with immediate relief to the patient. She then slept till 1½ P. M. At 3, urine ℥iv; cough relieved; tympanites diminished. 7½ P. M. Some spasm of the sphincter ani with pain; pulse 120; urine ℥ij. *A discharge simulating the catamenial appeared to-day.* She slept in the evening; less tympanites; twenty drops elixir opii at 10½ o'clock. 2½ A. M. Urine ℥vj; pulse 106.

31st, 7 A. M. *3d day after operation.* Face somewhat flushed; some thirst; pulse 120. Has some cough from mucus in the throat, but cannot raise it; no pain. Has had a pretty good night's rest. Gave mucilage of gum Arabic. At 8, urine ℥iv.

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[1] It is preserved in the museum of the New York Medical College.

12 (*noon*). Takes beef tea with relish; elixir opii, ten drops for the cough. Her face remained flushed, and the pulse 128, till 2 P. M., from the irritation in the throat; urine ℥iij. At 4, slight headache, the room being too warm. Cough troublesome; ten drops more elixir opii. 8 P. M. Urine ℥v; pulse 120; is comfortable, except fits of coughing. Used the rectal bougie with much relief. The cough persisting, twenty drops elixir opii were given at 9 P. M., and ten drops at 9½ o'clock, and at 11; pulse 116. 12 (*midnight*). Pulse 112; skin moist. At 2 A. M., urine ℥v. Tube left in the rectum. At 4, pulse 108.

November 1, 7 A. M. *4th day.* Has passed a quiet night. Wound united by first intention through its whole extent; removed tube from rectum; pulse 104. Gave ten drops elixir opii for the cough. At 8, urine ℥iv; has expectorated some; passed rectal tube again, with relief; ten drops elixir opii at 10½; cough still troublesome, but diminished; pulse 110; at 2 P. M., 105; urine, ℥iij; flatulence; still use the rectal tube. At 8 P. M., urine ℥iv; pulse 115; cough troublesome; fifteen drops elixir opii, and fifteen more at 10 o'clock. Ditto at 12 (*midnight*), to relieve a severe paroxysm of coughing. Again used the rectal tube, with relief, followed by sleep, till 3 A. M.; urine ℥iv.

2d, 9 A. M. *5th day.* Very comfortable; urine ℥iv, 2 P. M. 3½ P. M., urine ℥iv; cough still persists; ten drops elixir opii at 7, 8, and 9 P. M.; urine ℥iv; abdomen still distended. The use of the rectal tube was again followed by relief, and a quiet sleep for two hours. 1½ A. M. Urine ℥iij, somewhat turbid. *Catamenial discharge* diminishing. At 5½ A. M., a severe paroxysm of coughing; gave twenty drops elixir opii.

3d, 7 A. M. *6th day.* Cough troublesome still; ten drops elixir opii. Used rectal tube at 11; pulse 112. She is very comfortable and cheerful this P. M. At 3, pulse 120; needles and sutures not yet loosened; elixir opii, fifteen drops. At 12 (*noon*), she passed urine without the aid of the catheter. At 5 P. M., gave ten drops, at 7½ twenty, and at 9½ ten drops elixir opii for the cough. Her nourishment has been beef tea the last three days. At *midnight*, pulse 112; urinated voluntarily. At 3 A. M., had a violent paroxysm of coughing; twenty drops elixir opii, and twenty more at 7 A. M. Catamenial discharge ceased last evening.

4th, 10 A. M. *7th day.* Patient comfortable and cheerful; pulse 108; removed three of the needles and three sutures; pulse 102. Used the rectal tube at 12, with relief; urine drawn, ℥vj at 11 A. M, and ℥iij at 4 P. M.; pulse 120; twenty drops elixir opii, and fifteen more at 6 P. M. At 10 P. M., she passed ℥iv urine voluntarily; pulse 104. Catheter not used at all after this time.

5th, 6 A. M. *8th day.* Has rested well without any opiates since 6 o'clock last evening; evacuates urine freely; no cough; pulse 104. 11 A. M. Removed three more needles and two sutures. An enema of soap and water was administered; no result. Oleum ricini ℥ss at 1½ P. M. Three free alvine evacuations occurred in the P. M. Twenty drops elixir opii after the last one.

6th, 11 A. M. *9th day.* Patient doing well in all respects. Removed the four remaining needles and sutures. No cough or flatulence remaining.

7th, *10th day.* Patient doing as well as could be desired. Appetite good; strength increasing.

On the 8th, and again on the 10th November, the bowels were moved by an enema, the pulse meantime being at about 92. All the adhesive straps were removed on the 12th November (15th day after the operation), and she sat up for the first time fifteen minutes; pulse 84. A small slough of the skin had occurred where I had applied the nitrate of silver as a guide in making the first incision.

From this time, the patient steadily gained, until she was able to return to her friends and family. I left her on the 17th November, in the care of Dr. J. A. Smith, who reported that the two ligatures around the pedicle came away on the 26th of November, twenty-nine days after the operation, they having evidently become loosened three days previously. The remaining six ligatures came away as follows: November 28th and 30th, and December 13th, 20th, and 28th; two having come together on November 30th. She returned to her family on the 2d of January, 1857, and has remained in good health up to the present time (August 20th, 1858). The catamenia reappeared sixteen weeks after the operation, and have recurred regularly ever since.

Remarks.—I. In regard to the patient's strength at the time of the operation, this case presents a marked contrast to the preceding. With the exception of the cough and the excessive flatulence, no unpleasant symptoms occurred. To control the former, the elixir opii was given, sudden contractions of the abdominal muscles, especially when already much distended, being attended with risk. To avoid all motion as far as possible, the catheter was also used until the seventh day after the operation. Therefore, also, the first enema (and the oil) was delayed until the eighth day.

II. I suppose the tympanites was the result mainly of the weakness of the alimentary canal, from the removal of the pressure of the fluid previously in contact with it. Without the assistance of the rectal tube I should have been at a loss how to relieve it. The cough was attributed to a sudden change in the temperature of the patient's apartment. It was perfectly controlled by the elixir opii.

III. The thirst I attributed principally to the hemorrhage (thirty ounces); but it has always followed this operation, with me, to some extent, for a day or two, as the sudden loss of a large quantity of fluid might lead us to expect.

IV. The discharge simulating the catamenial, which appeared thirty-six hours after the operation, and continued four days and a half, I should regard as merely a uterine hemorrhage, resulting from the congestion consequent upon the change of circulation produced by the ligation of the pedicle. A similar discharge of blood commenced seventy-two hours after my first operation of this kind, and continued three days.[1] I however regard this as a very favourable occurrence, and almost a safeguard against metritis or peritonitis.

V. I have also regarded a free secretion of urine after this operation as a very favourable sign. The quantity secreted in each of the preceding cases, during the first six days, is shown by the following figures. The total is very nearly the same in both; the amount passed involuntarily on the fourth day in the first case, being supposed to equal that evacuated voluntarily on the sixth day in the second.

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[1] See this journal, April, 1851, p. 385.

	1st case.	2d case.
1st twenty-four hours.	10 oz.	10 oz.
2d " "	13	14½
3d " "	12	15
4th " "	6½ and invol.	17
5th " "	15½	16
6th " "	21½	7 and vol.
	78½	79½

VI. The needles and sutures were left in this case as long as admissible after they were loosened by ulceration, from an apprehension that the cough or the tympanites might return after the seventh day.

VII. Of the eight ligatures, seven came away still *looped*, and one was *untied*.

VIII. I would still insist on the importance of the *artificial serum* in aid of this operation. With it, I should not hesitate to keep the cavity of the peritoneum exposed to view for any required length of time.

No. 30 Clinton Place, New York.

Art. XI.—*A Homely Substitute for Cod-Liver Oil.* By Richard McSherry, of Baltimore.

It will probably long be an open question with the medical world whether cod-liver oil has specific virtues, or whether other oils or fats may be substituted for it as remedial agents. M. Berthé, from some experiments upon a healthy subject, was led to the inference that different oils had different degrees of assimilation, and according to his experiments, the pure, brown, cod-liver oil is of all the most assimilable. He proposed a division of the fatty substances into three groups: 1. Substances of difficult assimilation, as olive and almond oils, &c. 2. Assimilable substances, as butter, whale oil, English cod-liver oil, and probably all animal fats; and, 3. Very assimilable substances; brown and pure cod-liver oil, being the sole representative of this group.

This arrangement is, perhaps, well founded; at present, I only wish to refer to one article in the second group, that is, to *animal fats.* Since cod-liver oil came into general use for phthisis, and almost every other form of prolonged ill-health, with emaciation, or waste, physicians generally have recommended fat meats to aid, as an article of diet, in the process of restitution and repair, yet perhaps few thought of giving them a place among the articles of the materia medica.

The readers of this journal have read in the daily papers of dogs being killed, as some said, for sausage meat, but, as the slayers contended, to obtain their fat for remedial purposes. The last was, doubtless, the true object, as I learned not long since by accident. Some four or five years ago, I was called to see a German cobbler, apparently far gone in consumption. The cough, expectoration, emaciation, night-sweats, and extreme debility, concurred with the physical signs, so that there could be no reasonable doubt as to his true condition. I satisfied myself that there were cavities in his lungs, told his friends that he would not be with them long, advised him to go for his own comfort to the Baltimore Infirmary, and to begin, at once, to take cod-liver oil. After this, I thought no more of him, nor of his case. About a year ago, however, I was visiting a sick girl, when her mother observed, that, as she was about to be married, it was desirable she should be relieved as soon as possible. The mother went on to remark, that the girl was going to marry a man whom I had given up some years before to die of consumption.

At first I could not recall the case, but she reminded me of several particulars, and of my sending him to the Infirmary, where the attending physician confirmed my diagnosis; that is, he told the friends that the man would not live over a few weeks. He soon left there, however, to take care of himself. "And what do you think cured him?" said the mother. I replied that I did not know, unless it was the cod-liver oil. "No," she said; "that did him good, and it was the first thing that did, but he gave it up and was cured by *dog-fat.*" In fact, by the advice of some of his friends he had taken to this uninviting remedy, and considered himself cured. I saw nothing of him until a few weeks ago, when he called upon me to attend his wife in her *accouchement.* He looked pale and thin, but said he was "strong as a horse," had a good appetite, and was supporting his family by his daily labour. He had no cough, and no expectoration. I made some examination of his chest; found percussion sounds flat, or very dull upon the superior regions of the chest anteriorly and posteriorly; respiratory sounds very feeble except upon forced inspiration, and then, subcrepitation and rudeness about the right scapula. Just under the centre of the scapula, there was a peculiar wheezy sound something like what a boy makes through a green rye straw when cut as a reed instrument; and there, doubtless, was a cavity with cicatrized walls. From the impulse of the heart throughout that region, with other evidences, there could be no doubt of considerable condensation of the tissue of the lungs.

I mentioned this case to intelligent persons, both in and out of the profession; several of whom told me they had known of similar cases; all being among the humbler classes of our German population. I am not prepared to say that dog-fat has any virtues superior to other animal fats; I merely state the fact, that though an inelegant remedy, it appears to be with certain classes both popular and successful. I must not omit to state, however, that my quandam patient used freely such *juvantia* as infusions of juniper berries, turpentine, mistletoe of the oak, and perhaps others.

ART. XII.—*Case of Poisoning by Gases of a Privy Sink, and Recovery.*

By Dr. S. J. RADCLIFF, of Baltimore, Md.

I WAS awakened June 22d, at a quarter to four o'clock A. M., by night watch, and requested to hasten to see a man who had fallen in a privy sink. I went with all possible dispatch, and found that the man had been extricated from his perilous position, and was in a sitting posture on the ground. I learned that he (a strong, athletic German, employed in the night business), with two others, was engaged to cleanse the sink, which was eighty feet deep, and that they had already, by apparatus from the top, drawn out six large cart loads, a load being about one hundred and seventy-five gallons. He now attempted to descend into the sink to complete the work, its contents being only about two feet and a half deep, but he was overcome by the noxious gases, and precipitated to the bottom; this happened at about one and a half o'clock A. M., according to the account of the bystanders. Every means was used to extricate him by his fellow workmen and the watch, but seemingly to no purpose. They kept him alive apparently by continued douches of cold water, until, finally, when he had been down *about two hours*, from the best information I could obtain, finding he was too much exhausted to grasp a rope, and life was almost extinct, a ladder of sufficient length was procured, and, at the risk of their own lives, several of the men descended a considerable depth and succeeded in rescuing him; he was speechless, and muscular debility and insensibility were considerable, and there was little hopes entertained of his recovery. When I saw him, some ten or fifteen minutes after he had been taken out, he was much asphyxiated and depressed, respiration hurried and difficult; pulse soft and feeble; skin cold and shrivelled, and his whole frame agitated as if by the cold stage of an intermittent. This was doubtless caused, however, by his having to remain so long in the cold, semi-fluid mass, with the addition of the cold showers from above. I also found several contusions about his face and right arm, which he received by being dragged against the rough sides of the sink. The fresh air revived him, and I had him conveyed to his residence, some distance off, partly on a ladder, but most of the way on a spring wagon. The agitation of the vehicle, and the fresher air of the more open part of the city, revived him still more; so much so, that when he arrived at his home, he was able to walk with the assistance of one on each side of him, up to his chamber. I directed the whole upper part of the house to be opened, that he might have the benefit of the fresh morning breeze, the removal of his clothing, and his entire person to be cleansed immediately. After abundant ablutions of water, and subsequent drying, friction to the whole surface was instituted, and an occasional stimulant administered internally. When he had recovered sufficiently, I directed him to be put to bed, and to be covered with an adequate amount of clothing to insure warmth, and consequently reaction. As he had some nausea of the stomach, I administered a warm mustard emetic, which relieved him. I left him at 5 o'clock A. M., much recovered and disposed to sleep. At 8 o'clock A. M., saw the patient again. Reaction had taken place, though moderately; the heat of the surface and the beat of the heart were but little above normal, and after removing the superabundance of bed-clothing, the feverishness, of which he slightly complained, partially subsided. He complained of no giddiness or headache, but still felt much nauseated, and thought he could taste or smell nothing but the disgusting effluvia, so completely were the nares, fauces, and even lungs saturated with it. Respiration was becoming easier and freer, and the general symptoms much abated. His face was very sensitive, and his right upper arm, which had been broken some six months before, and either badly set or badly treated subsequently by his former physician, also pained him very much. His forearm was permanently pronated, and his elbow-joint fixed, the lower arm forming an obtuse angle with the upper arm, and in dragging him along the sides of the sink it received some slight injuries, probably from stretching of the fixed ligaments. Fearing the supervention of typhoid symptoms, which are very usual in such cases of poisoning, and the indications not being pressing, I deferred venesection, ordered a brisk cathartic, the house to be kept opened, and a constant circulation of air through his apartments, his contusions to be bathed in cold water, etc. 23d. Saw the patient again. He was decidedly improved. No untoward symptoms were manifest, and he complained of nothing but the bruises about his face and arm. His system was nearly purged of all effects of the sulph. hydric acid or other gases, although his expirations were offensive, his mouth tainted, and his stomach was still slightly nauseated. He had no headache or giddiness, however; his pulse was natural, and other symptoms much abated. From this time he mended rapidly, and soon became convalescent. I regret I had no opportunity to apply a test.

Remarks.—The chief point of interest in the above case is the length of time the patient remained in the deleterious air, without meeting with death. The gases could not have been different from those of other privy sinks, and it is well known that an atmosphere impregnated with a very small quantity of the resulting gases—sulph. hydric being the principal—of night soil decomposition, is sufficient to kill a man. The depth of the sink and of the contained mass, and re-exposure of portions of it to the atmosphere, and external causes of decomposition, would preclude the least possibility of the purity or non-effectiveness of the contained air. The only counteracting influence employed was the cold douche, but this was not sufficient to obviate the direct application of the poison to parts whose retarded function would cause death. Life was sustained for nearly or quite two hours, in direct opposition to this view of immediate poison. If suspended animation would be a better term as more expressive of the real condition of the patient, it must have been the result of the poison, and if poison, what retarded its operation? Why is not the poison uniform in its operation?

I make no further comments on the above, but submit it as it is to the profession for their consideration.

TRANSACTIONS OF SOCIETIES.

Art. XIII.—*Summary of the Transactions of the College of Physicians of Philadelphia.*

1858, *June 2. Some Facts in Relation to the Nocturnal Incontinence of Urine in Children.* Dr. Addinell Hewson read the following paper:—

There is perhaps no subject which practitioners deem less worthy of their attention, than that of the nocturnal incontinence of urine amongst children. By many this is considered a very trifling affection—by others as no disease whatever; and yet I am disposed to believe that there are but a few who have not been more than once baffled in their attempts to relieve it; still, a very few have ever deemed the subject worthy of close investigation, or careful study; and the majority of those who have written in relation to it have merely indulged in vague generalizations, from recollection only of what they have seen. In this way, various, and often diametrically opposite views, have been broached in regard to its nature, and a great diversity and multiplicity of remedies have been vaunted for its cure.

But these circumstances have only served to convey to my mind the conviction that there is yet much to be learned on the subject. I shall, therefore, with the view of adding something at least to our present stock of knowledge on this matter, proceed to lay before the College some facts in regard to it, which I have had the opportunity of observing, under circumstances peculiarly favourable to their thorough investigation.

In the early part of the past year (1857) I was requested by some of the managers of the House of Refuge to suggest a cure for those of the children in that institution, who were in the frequent practice of wetting the bed; on an investigation, instituted through the watchman and nurse, who furnished me with a daily record of the offenders, I ascertained that there were seventy-eight boys in the institution at that time (the latter part of January), affected with this form of enuresis. This, in a household averaging two hundred and ninety-two boys, gave an alarming proportion of cases, viz., 1 to $3\frac{75}{100}$, and invested the subject with much more importance in my mind than it had ever possessed before. I therefore determined to investigate it. For this purpose, I subjected each case to a most careful examination, and made inquiry into every moral and physical occurrence—into every hygienic and police regulation—into the diet, habits, occupations, and other circumstances which might affect these cases, either individually or collectively. The facts thus obtained were carefully recorded by me at the time, and the chief substance of them will be found in this paper.

I shall however confine myself to the consideration of sixty-three of the seventy-eight cases, as the others, fifteen, were only a short time under observation, having been discharged from the institution in the early part of the year. The cases from which my remarks will be drawn, were under my constant observation and control for a period of five months. Tables I. and II. contain abstracts of the histories of these cases. These cases (sixty-three) were very unevenly distributed in the two departments, for there were twenty-nine on the white side, and thirty-four on the coloured side of the house. But, as there was more than twice the number of white to coloured boys in the institution—the ratio for the blacks was far greater than appears above. Thus, of the whole number of boys, two hundred and ninety-two, two hundred and one were white boys, and only ninety-one were black. This would give a ratio of the diseased of 1 in 7 for the white, and 1 in 2.7 for the black. Thus, it would appear that the disease was more than twice as prevalent amongst the black as amongst the whites.

The most obstinate and inveterate case was amongst the blacks.

The average age of the whole number was twelve and one-third years, or in absolute figures twelve years four months and seventeen days.

For the white boys the average age was thirteen years; for the blacks twelve and two-thirds years, or in absolute figures, twelve years eight months and fifteen days.

The youngest affected with the disease was seven years old; the oldest eighteen.

The greatest number affected at any one age was nine, this was at the age of fourteen.

The greatest number affected at any age amongst the coloured boys was seven, at the age of fourteen. The greatest number amongst the white, at any one age, was five. This number occurred at the two ages of eleven and sixteen. The worst case (Cope) was eleven years old. But of the six worst cases out of the sixty-three, three were above eleven years of age, and two below.

The following is a table of the numbers affected at different ages:—

	White.	Black.	Total.
7 years old,	1	...	1
8 "	1	3	4
9 "	1	2	3
10 "	1	4	5
11 "	5	2	7
12 "	4	4	8
13 "	3	4	7
14 years old.	2	7	9
15 "	3	2	5
16 "	5	3	8
17 "	1	...	1
18 "	1	1	2
Unknown (young)	1	2	3
	29	34	63

The general appearance of health was good in thirty-four of the whole number; these were nineteen whites, and twenty-five blacks, and were all stout hearty boys.

Seven boys were markedly strumous. Of these seven, four were whites and three blacks.

Fifteen were thin and pallid.

Four of the (six) worst cases were stout and hearty. The worst case of all (Cope), was a remarkably stout, hearty looking boy.

The appetite was excellent in fifty-three; thirty of these were blacks, and twenty-three whites.

It was poor in ten, six whites, and four blacks; and of these ten cases, seven suffered with seat-worms; four had furred tongues, two had diarrhœa, and three suffered with constipation.

Twenty-four of the sixty-three had seat-worms (oxyuris vermicularis) making more than one-third of the whole number the subjects of this intestinal irritation. Five of the six most inveterate cases suffered from this trouble. The sixth (Galbraith) suffered from spongy gums. Seven of the white boys were suffering with ringworm (herpes circinatus), and one had the itch (scabies).

Twenty-seven of the cases had clean healthy tongues. Thirteen of these were white boys, and fourteen coloured.

Nineteen had pale, putty looking tongues. Of these eight were white, and eleven coloured.

In seventeen the tongue was coated, viz., eight white, and nine blacks.

Twenty-six had but one alvine dejection per diem. Thirteen of these were white, and thirteen blacks. Sixteen had more than one (from 2 to 4) per diem, viz., eight whites, and eight blacks.

One boy (coloured), had no control whatever over his sphincter ani.

Twenty, eight white and twelve blacks, suffered from constipation. Three of the six worst cases suffered from constipation. Cope, the worst case of all, was regular in his bowels.

Twenty-seven of the cases urinated two or three times in the day, besides emptying the bladder in the morning on rising, and in the evening on going to bed. Eighteen of these were coloured, and nine white.

Twenty-eight, sixteen whites and twelve blacks, were obliged to urinate more frequently during the day.

Three could give no satisfactory account of how often they had to go out to urinate. Four, including the coloured boy who could not retain the contents of the rectum, had no control over the bladder, and wet their clothes during the day; one of these was idiotic.

The urine was of normal colour in	46
" " very pale "	17
	63

It was acid in every one of the sixty-three cases. In four (all white boys), it was very much so, and in seventeen it was only slightly so.

The average specific gravity was 1018. Amongst the whites the average sp. gr. was 1016; amongst the blacks, 1020.

Lowest specific gravity observed was 1010 (in the urine of a coloured boy). The highest 1027 (also in a coloured boy).

The greatest number of any one specific gravity was sixteen. In these it was 1020. The range of the specific gravity for all the cases was as follows:—

Sp. gr.	White.	Black.	Total.
1010	3	1	4
1012	5	...	5
1013	1	...	1
1015	6	1	7
1016	...	2	2
1017	2	1	3
1018	1	3	4
1019	...	5	5
1020	8	8	16
1021	...	3	3
1022	1	...	1
1023	...	2	2
1024	...	2	2
1025	1	1	2
1026	...	1	1
1027	...	2	2
Not observed	1	2	3
	29	34	63

Uric acid was deposited in	31	specimens.
Urate of ammonia[1] "	8	"
Urate of soda "	1	"
Ammonio phosp. mag. "	1	"
	41	
There was no deposit in	22	

Twenty-one of the specimens which yielded uric acid sediment were furnished by the white boys; ten by the black. Six of those which yielded urate of ammonia were obtained from the coloured boys, and in only two specimens from the white boys was urate of ammonia found in excess. The single case of urate of soda was a coloured boy. The ammonio-phosphate of magnesia was found in the urine of a white boy. Of the twenty-two cases in which there was no deposit on cooling, seventeen were black boys, and five white.

I would state in reference to these investigations of the urine, that they were all made by myself, with the assistance of my friends Dr. G. C. Harlan, at the time the Resident of Wills' Hospital, and Dr. John Brook, of Reading, then my private pupil. The number of specimens was too great to admit of the possibility of more than a clinical examination of each one. The urine examined was voided in the morning, in my presence. Its specific gravity and chemical reaction were immediately noted, and, as soon as I could reach home with the specimens, I subjected each to a careful microscopic examination, and made also some rough attempt to determine—by chemical agents—the character of the solid constituents. It was especially necessary that these examinations should be made rapidly, in order to determine, with anything like accuracy, the presence of free uric acid, as it is well known that this acid is often set free by decomposition of its salt, within a short time after the urine has been voided.

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[1] The deposit so called by Golding Bird, but which Lehmann declares to be urate of soda.

I esteemed accuracy, in this respect, of greater importance than a more minute detail of a few of the specimens; for it would have been impossible to have made a detailed analysis of all the specimens voided at the same time; and, to have examined the cases all separately, and at different times, might have led to some error.

The prepuce and penis were discoloured, and the former much elongated as either from frequent pulling, to relieve the itching of cystic irritation, or as from masturbation in no less than forty-six cases.

	White.	Black.
These were	21	25
The organ appeared natural in twelve	6	6
" " unusually small in two	...	2
" " very large in three	2	1
	29	34

As regards the vice of masturbation, eighteen, twelve white boys and six black, confessed to being guilty. In twelve other boys, five whites and seven blacks, there was no suspicion of guilt in this; but in the remaining thirty-three, namely, twelve whites and twenty-one blacks, there was every reason to suspect them; their manner of denying the accusation, and the appearance of the genitals, tended to fix these suspicions on them.

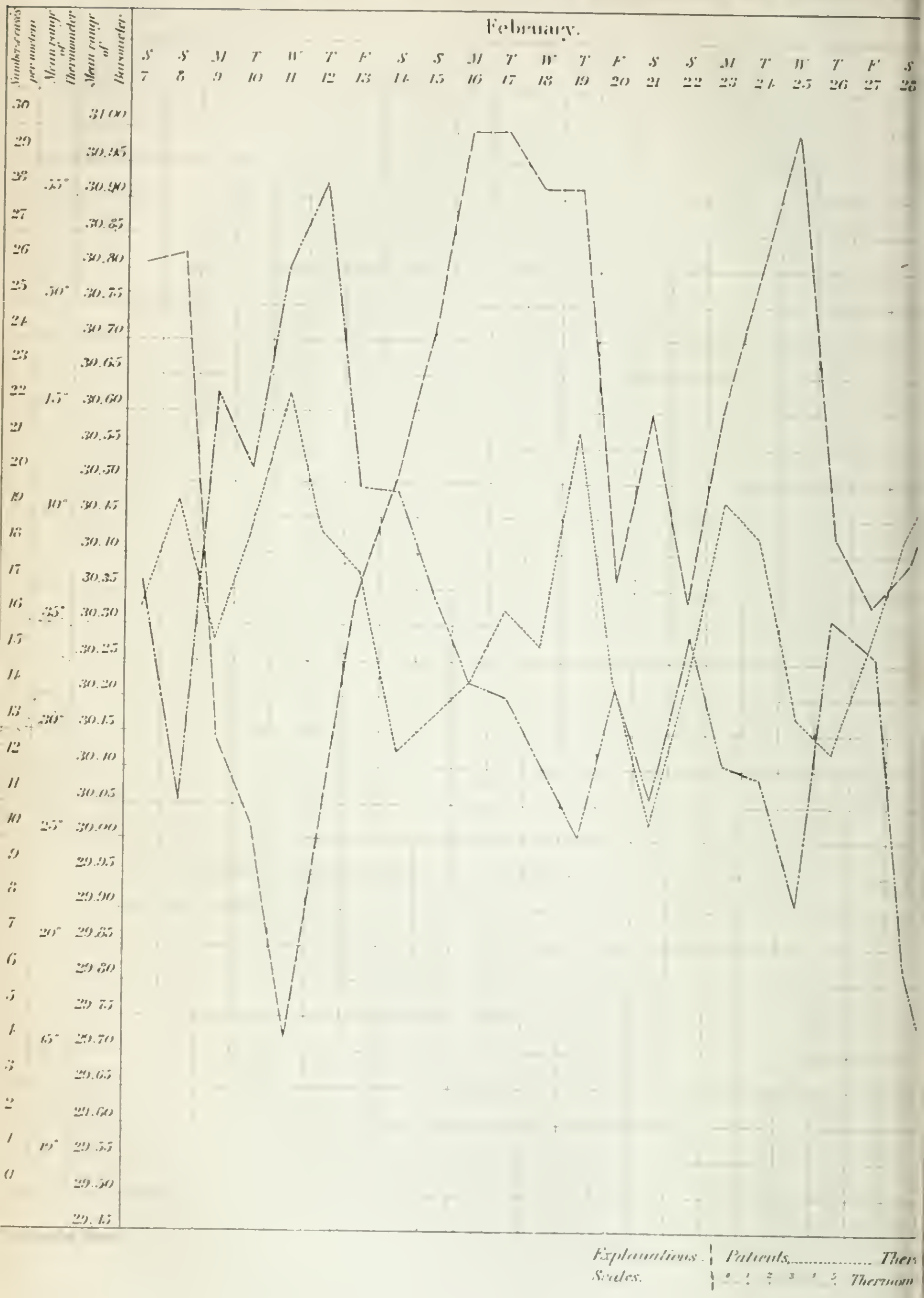
As to the frequency with which the enuresis occurred there were only two who were guilty of it every night without intermission, these would even wet the bed more than once in a single night. Three, all whites, were found to do it six or seven times in the week, with considerable regularity. Seven, three white and four coloured, five or six times; six, three, from either colour, four or five times; six, one white and five coloured, three or four times; twelve (six of each), two or three times; ten (six white and four blacks), once or twice; twelve (five white and seven blacks), only once a week, and three, not as often as once a week. For Wednesday and Saturday night—and especially for the latter—there was always a greater number reported than for any other night of the week; and there was always a fewer number for Sunday night.

These singular facts were merely demonstrative, however, of the influence of diet on the disease, for on Wednesday and Saturday the inmates of the the coloured department had salt pork or fish and hominy for dinner, the white boys had the same, only on Saturday; and fresh beef (boiled), soup, potatoes, rice, cabbage, and bread, on the other days; and for the evening meal, they had mush and molasses regularly every evening, except Saturday and Sunday evening. On the former of these occasions, they had, instead of the mush and molasses, soup, obtained in the preparation of Sunday's dinner; and on the latter (Sunday evening), they got bread and molasses. The late rising on Sunday morning, which prevails in the institution, might also have contributed to swell the list of Saturday night.

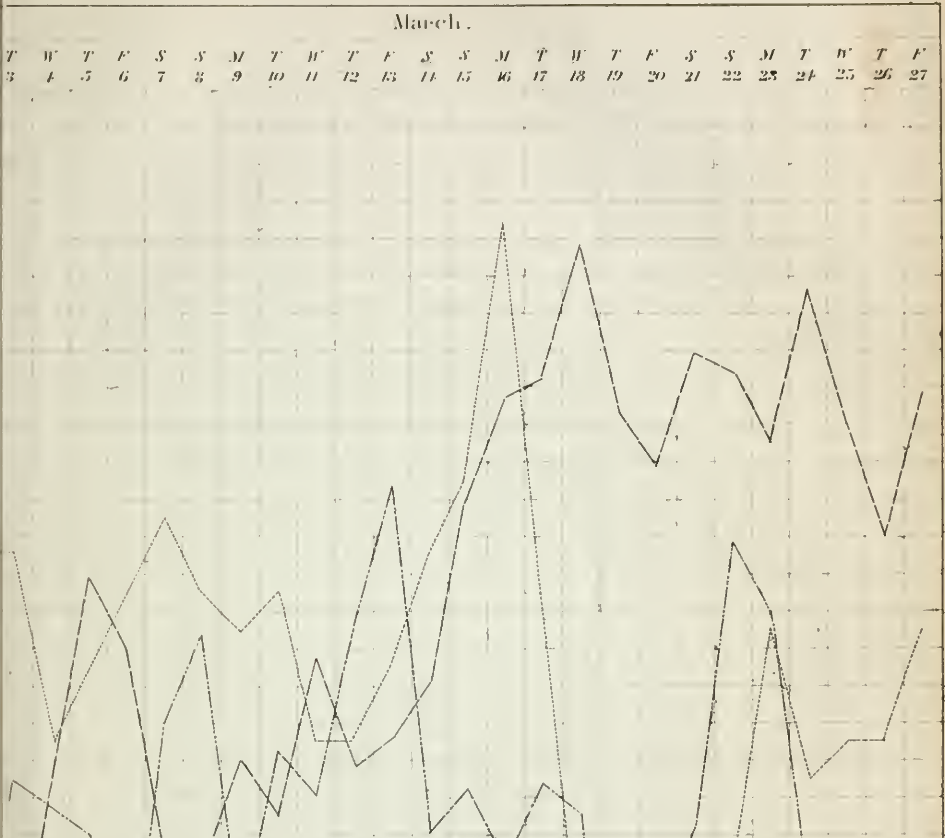
Atmospheric vicissitudes seemed also to exert an influence on the disease. Thus, a sudden fall in the thermometer, or barometer, during the night—either together or separately—always appeared to increase the number of cases. A decrease of temperature seemed especially to produce this effect. I have attempted to represent the influence of these changes in Table III. The apparent exceptions to the statement I have just made, which are noticeable in this table, can be satisfactorily explained in every instance. Thus, many of the exceptions will be found occurring on Wednesday, Saturday, and Sunday nights; but a reason has been already given for the increase of cases on the first and second of these occasions, and for their decrease on the last, which may overbalance the influences of the atmospheric vicissitudes. Thus, it will be observed on the night of the 8th of February, the number of cases decreased, although there was a great fall in the thermometer during that night; but this was Sunday night—the night of all others in which the fewest cases occurred, owing to its being the only night on which they got a dry supper. But even in the majority of these nights (Wednesday, Saturday, and Sunday), where sudden changes have occurred, the influence of such changes has been manifest, although not so much as it was on other occasions. Thus, on the night of Sunday, the 22d of February, the number of cases was increased rather than decreased, as it should have been from the dry supper of that night; but on that night the barometer fell, and thus this instance is proved to be no exception to the rule.

The occurrences of this night, however, furnish another explanation for some of the apparent discrepancies in this table. My only way of representing the thermometrical and barometrical changes between the different days was to give the mean range of each day. These changes may therefore be said to be only representable in an approximate sense. The mean range of the day has thus in some instances indicated an exception to my statement, which in reality had no existence. Thus, in the instance to which I have just been referring, the thermometer rose only 6° during the day of the 22d (Sunday), fell through the night, and was down to 35° in the morning of the 23d. During the 23d it rose so high as really to make the mean of that day much above that of the day previous. Here, then, the table represents the thermometer as rising between the two days, whereas it in reality fell during the intervening night. This fact, it might be thought by some, should destroy all inferences drawn from this table. But this table was merely made to indicate on a glance facts which were observed at the time of their occurrence. It may therefore be said to furnish but an approximation to the

Table III. Showing the influence of Thermometrical and Barometrical



n EXURESIS during a period of forty nine days.



truth. If it, however, under such circumstances, justifies the statement I have made—that the number of cases was always increased by a sudden and decided fall in the thermometer and barometer—how much more accurate must that statement in reality be? I could furnish the records of each day for the whole period of five months, and demonstrate, beyond all cavil, the truth of what I have said; but the recital of such dry details would prove neither interesting nor instructive. I have perhaps already dwelt too much on this point; but as I have found fault with others for merely stating vague inferences of what they have seen, it is especially incumbent on me to avoid exposing myself to similar censure. The fact of such sudden changes influencing this disease, may be thought by some never to have required demonstration.

A reference to this table has suggested to my mind another circumstance which should be mentioned. It will be observed that the number of cases steadily and rapidly increased between the 12th and 16th of March. This increase took place in defiance of the weather, and was, at the time, the source of some perplexity to my mind. In the early part of the week previous, I had ordered all the cases to abstain from drinking anything at the evening meal. This had had an appreciable influence on the number of cases reported during that period; but it was not a mode of treatment altogether agreeable to the patients; some of them, therefore, on the evening of the 12th, slipped off and took a good drink at the hydrant, just before going to bed. The success of their stratagem was such as to induce others to follow their example. The number of visitors to the hydrant increased each night, and their fear of detection became less and less, until, on the night of the 16th, they were caught at their libations. The rigid enforcement of my directions showed itself on the 17th; for on the night of that day the number fell off ten.

On the five nights following that of the 17th of March, this table shows still another digression from what I have stated as occurring so uniformly. During these five nights, the number of cases appears to have been small, although considerable change took place in both the thermometer and barometer. The cases in this portion of the table are, however, only from the coloured department, for, during these five days, the watchman was ill, and unable to report the cases in the white department.

Some influence may perhaps be attributable to the occupations of these boys, in the production of the disease; and the difference of occupation in the two departments may serve to explain the greater frequency of free uric acid amongst the white, and its occurrence in combination with the blacks.

The white boys over 12 years were engaged in the light work of making match-boxes, daguerreotype cases, and brushes. The black boys over 12, in driving heavy machinery for making umbrella frames, which required great consumption of muscular strength.

The departments of the whites are heated by steam; those of the blacks by hot air furnaces. The white boys have more playground, and there is a better circulation of air through their part of the inclosure.

The diet of the house consists of coffee, diluted with milk, and sweetened with molasses, and of dry bread for breakfast. The bread is a mixture of Indian, rye, and wheat, well fermented, and sweet.

For dinner they get soup made with beef, cut in large pieces, which is afterwards served to them as meat, with potatoes and turnips, or hominy, rice, or beans. This constitutes the midday meal every day, except on Wednesday and Saturday, in the colored department, and on Saturday in the white side, when codfish or salt pork is served instead of the beef.

For supper they have Indian mush and molasses every day, except on Saturday and Sunday, as before specified. The meals are all devoured with the rapidity usual to children in public institutions.

In the treatment of these cases, I made trial of a number of the remedies which have been recommended for the cure of this disease, with very variable success. In the first instance I, however, put all the cases on the use of the bromide of potassium in 2½ and 3 gr. doses, thrice daily, according as they were above or below 12 years of age. I do not know of this article ever having been employed, before or since that time, for this purpose. I used it solely for the anaphrodisiac effect which I had seen it exert in cases of seminal emissions and masturbation, and thinking that much of the incontinence of urine was due to irritation consequent on masturbation, of which so many of the cases furnished strong evidence of being guilty, I determined to give it a trial.

In nine of the sixty-three it effected a complete cure. Not one of these nine cases wet the bed after the first week of its administration. One of these cases was quite a bad one of the disease; but what was singular, I had no reason to suspect him of masturbation. There were also two others in which there was no reason to suspect this vice. In the rest, there was reason for the suspicion, and two of them confessed to being guilty of it.

There were four cases materially benefited by this remedy, although not entirely relieved. Two of these confessed to being masturbators, and one was suspected of the vice.

In the rest of the cases (namely, 50), it seemed to exert no beneficial effect whatever, although its use was faithfully persevered in for two weeks; and in the cases in which masturbation was most strongly suspected, the tinct. of lupuline was combined with it, without any benefit being effected. I should state, also, that the cold douche on the back, loins, and belly, was employed in all the cases whilst the bromide of potassium was being used. But as the douche had been previously employed without any appreciable improvement whatever in the disease, the success above stated, I think, may be justly attributed to the bromide of potassium.

In the cases (54) which were not cured by this remedy, I next employed the tincture of the chloride of iron in five and three drop doses, thrice daily, and doubled the dose at the end of the first week of its use. I gave this a fair trial of more than six weeks, and combined with it the cold douche at bedtime, and a dry supper of bread only. The number of cases at the end of these six weeks was, however, as great as when I began the use of the iron.

I then tried the treatment by cantharides, and gave all the white boys the tincture of cantharides in five drop doses, repeated three times each day, from the 22d of April to the 11th of May, and during this same period I applied a series of blisters by the cantharidal collodion over the sacrum and pubes of each of the coloured boys. But, at the end of that time—two weeks—I could not point out a single case which had been in any way benefited, although strangury was effected in the majority of them.

Finally, in the second week of May, I established what I considered a more rational plan of treatment. I ordered for each boy suffering with constipation, a dose of magnesia; for those who were affected with worms, turpentine ʒj, with bicarb. of soda, gr. v, three times a day. And I put them all on the belladonna, giving them five drops of Squire's juice, prepared by Bently's process.

I also ordered that they should all have a dry supper of bread alone, as had been previously recommended, and the cold douche. Each boy was made to rise and urinate an hour after retiring for the night. Under this plan, the number of cases diminished with really astonishing rapidity. During two nights, at the end of the first week of its adoption, there was not a single case reported in the whole institution. Such a thing had not occurred before during the whole time they were under my observation.

At the end of May—two weeks after placing them under this treatment—only four cases, besides those who wet their clothes during the day, were reported, and these were somehow suspected of deliberately wetting the bed for the sake of being continued on bread for supper, which they preferred to the mush. I therefore ordered that all the cases which had been under treatment, should have only a small allowance of bread, so as to go to bed hungry. From that time there was not another case, besides those which suffered with daily incontinence, reported to me. And at the end of June, when my term of service expired, the cases had all been without treatment for two weeks, and there was no recurrence of the disease in any of those affected with the nocturnal incontinence alone. I had never expected to cure those who were unable to control their bladders during the day by any of the remedies above enumerated, and only treated them as I did for the purpose of demonstrating the effects of such remedies in this form of the disease. As it was, however, all these cases were benefited by the belladonna and turpentine, where there existed the association of oxyuris vermicularis with the enuresis. Another of these cases had spongy gums and stomatitis, and took with benefit the chlorate of potassa. The other case was idiotic, and on him the belladonna manifested less benefit than on any of the others.

TABLE I.—*Abstract of the Cases of Enuresis occurring*

No.	Name.	Age.	General appearance	CONDITION OF DIGESTIVE ORGANS.			CONDITION OF URINE.			
				Appetite.	Tongue	Evacuations.	Frequency per diem.	Color.	Sp. gr.	Chemical reaction, sediment, &c.
1	Koehler	17	Stout and hearty	Good	Natural	1 per diem	3 or 4 times	Natural	1010	Slightly acid; no sediment
2	J. McGuire	7	Short and thin	Capricious	Coated	1 per diem	3 or 4 times	Natural amber	1020	Very acid; ur. ac. and ur. amm.
3	T. McGuire	12	Thin & pale	Good	Natural	Not regular	4 or 5 times	Natural amber	1025	Very acid; urate of ammonia
4	Root	..	Short & very hearty	Good	Slight fur	3 per diem	4 times	Natural amber	1020	Acid; no sediment
5	Alex. Gibbs	12	Fair and thin	Variable	Pale	Not regular	3 or 4 times	Natural amber	1020	Acid; no sediment
6	And. Gibbs	8	Pale & thin	Variable	Pale	Not regular	2 or 3 times	Natural	1020	Acid; uric acid sediment
7	Haley	16	Pale & thin	Variable	Slight fur	Not regular	2 or 3 times	Pale	1010	Acid; uric acid
8	Galbraith	15	Short and stout	Good	Pale	Not regular	Wets his clothes	Amber	1015	Acid; uric acid, large crystals
9	Morris	9	Small, thin. and pale	Good	Coated	3 per diem	3 or 4 times	Pale	1012	Acid; uric acid, large crystals
10	Farns	15	Small and feeble	Good	Natural	1 per diem	3 or 4 times	Natural	1020	Acid; uric acid
11	C. Bloomer	13	Thin and shy	Variable	Natural	Not regular	3 or 4 times	Natural	1015	Acid; uric acid and urate of ammo.
12	W. Bloomer	12	Thin but healthy	Good	Natural	1 per diem	3 or 4 times	Natural	1017	Acid; (slightly) uric acid
13	Hartz	16	Large, hearty	Good	Coated	1 per diem	2 or 3 times	Pale	1015	Acid; no sediment
14	Walker	11	Thick set and hearty	Good	Pale	1 per diem	3 or 4 times	Natural	1020	Acid; uric acid
15	Dolin	14	Pale	Good	Natural	1 per diem	3 times	Bright amber	1020	Acid; uric acid small quantity
16	Nesson	14	Healthy	Good	Pale putty	Not regular	2 or 3 times	Pale	1015	Acid; uric acid lozenges
17	Cook	11	Thin	Good	Pale	2 per diem	2 or 3 times	Light amber	1020	Acid; uric acid
18	Falkner	13	Healthy	Good	Coated	Not regular	Every 3 hours	Pale	1012	Acid; ammonia, phos. of mag.
19	Osborne	16	Stout, healthy	Good	Natural	1 per diem	3 or 4 times	Pale	1010	Acid; uric acid
20	Bennett	16	Strumous	Good	Coated	1 per diem	3 or 4 times	Pale	..	No sediment
21	Baker	16	Tall, strumous	Good	Putty	2 per diem	3 or 4 times	Amber	1015	Acid; no sediment
22	Fullerton	11	Thin (red hair)	Good	Natural	1 a week	2 or 3 times	Pale	1018	Acid; uric acid slight
23	Young	12	Healthy	Good	Pale	2 per diem	3 or 4 times	Amber	1012	Very acid; uric acid
24	Price	15	Healthy	Good	Natural	1 or 2 per diem	2 or 3 times	Pale	1012	Very acid; uric acid
25	Johnston	13	Strumous	Good	Natural	1 or 2 per diem	3 or 4 times	Pale	1015	Acid; uric acid
26	McCann	11	Thin	Good	Slight fur	1 per diem	3 or 4 times	Natural	1017	Acid; uric acid
27	Shannon	10	Healthy	Good	Natural	Not regular	3 or 4 times	Natural	1022	Acid; uric acid
28	Porr	18	Pale, thin (idiotic)	Variable	Natural red	2 per diem	Wets his clothes	Pale	1012	Acid; urate of ammonia
29	Callender	11	Strumous	Good	Natural	1 per diem	3 or 4 times	Natural	1013	Acid; uric acid

in the White Department of the House of Refuge.

Special disease.	Frequency of habit.	Appearance of genitalia.	Secret vice.	Remarks.
No ascarides or other dis.	4 or 5 times a week	Natural	None	Cured by bromide of potassium.
Has ascarides	6 or 7 times a week	Natural	None	Cured by belladonna, turpentine, and soda.
No ascarides or other dis.	6 or 7 times a week	Prepuce elongated and red	Denies any	Cured by belladonna and magnesia.
Has ascarides	6 or 7 times a week	Prepuce and penis elongated	Denies any	Cured by belladonna, turpentine, and soda.
No ascarides or other dis.	3 or 4 times a week	Natural	None	Cured by belladonna.
No ascarides or other dis.	4 or 5 times a week	Natural	None	Cured by belladonna and magnesia.
No ascarides or other dis.	5 or 6 times a week	Prepuce and penis elongated	Confesses	Benefited by bromide of potassium.
No ascarides: spongy gums	6 or 7 times a week	Prepuce and penis elongated	Confesses	Benefited by belladonna.
Has ascarides	5 or 6 times a week	Natural	None	Cured by bromide of potassium.
Has ascarides	Once a week	Prepuce and penis elongated	Confesses	Benefited by bromide of potassium.
No ascarides	Once a week	Prepuce and penis elongated	Denies any	Benefited by bromide of potassium.
No ascarides	Once a week	Natural	Denies any	Benefited by bromide of potassium.
No ascarides	1 or 2 times a week	Prepuce and penis very large	Denies any	Cured by belladonna and magnesia.
No ascarides	4 or 5 times a week	Prepuce and penis elongated	Denies any	Cured by belladonna.
No ascarides	5 or 6 times a week	Penis large; has a rupture	Denies any	Cured by belladonna.
Has herpes circinatus	2 or 3 times a week	Prepuce and penis elongated	Denies any	Cured by belladonna and magnesia.
No ascarides	2 or 3 times a week	Natural	Denies any	Cured by bromide of potassium.
Has ascarides	Once a week	Prepuce and penis elongated	Confesses	Cured by bromide of potassium.
No ascarides	2 or 3 times a week	Prepuce and penis elongated	Confesses	Cured by belladonna.
No ascarides	2 or 3 times a week	Prepuce and penis elongated	Confesses	Cured by belladonna.
Has herpes circinatus	2 or 3 times a week	Prepuce and penis elongated	Mast ev'ry night	Cured by belladonna and magnesia.
Has scabies, no ascarides	Once a week	Prepuce and penis elongated	Confesses	Cured by belladonna.
Has herpes circinatus	1 or 2 times a week	Prepuce and penis elongated	..	Cured by belladonna.
Has had ascarides	1 or 2 times a week	Prepuce and penis reddened	Denies any	Cured by belladonna and turpentine
Has herpes circinatus	1 or 2 times a week	Prepuce and penis elongated	Confesses	Cured by belladonna.
Has herpes circinatus	1 or 2 times a week	Prepuce and penis elongated	Denies any	Cured by belladonna and magnesia
Has herpes circinatus	2 or 3 times a week	Prepuce and penis elongated	Denies any	Cured by belladonna and magnesia.
No ascarides	Day and night	Prepuce and penis elongated	Confesses	Benefited by belladonna.
Has herpes & ascarides	1 or 2 times a week	Prepuce and penis elongated	Confesses	Benefited by belladonna.

TABLE II.—*Abstract of the Cases of Enuresis occurring*

No.	Name.	Age.	General Appearance.	CONDITION OF DIGESTIVE ORGANS.			CONDITION OF URINE.			
				Appetite.	Tongue	Evacuations.	Frequency per diem.	Color.	Sp. gr.	Chemical reaction, sediment, &c.
1	J. Cole	10	Thin mulatto	Good	Pale	Constipated	2 or 3 times	Light	..	Saccharine; no sediment
2	Morris	9	Stout, dark	Good	Pale	Not regular	3 or 4 times	Natural	1025	Acid; uric acid and urate of ammon.
3	Banks	12	Stout and healthy	Good	Natural	Constipated	2 or 3 times	Light amber	1024½	Acid; urate of ammonia
4	Robinson	12	Markedly strumous	Good	Slight fur	Not every day	3 or 4 times	Natural	1023	Acid; urid acid
5	Harris	13	Healthy	Good	Natural	Once a day	1 or 2 times	Natural	1019	Saccharine, acid; no sediment
6	Clark	9	Healthy	Good	Pale	Not regular	2 or 3 times	Natural	1020	Acid; no sediment
7	J. Brown	14	Healthy, large lips	Variable	Pale	Regular	2 or 3 times	Natural	1021	Acid; no sediment
8	Eates	16	Dark, stout, healthy	Good	Slight fur	Twice a day	Twice a day	Natural	1019	Acid; no sediment
9	Wallace	..	Stout mulatto	Not good	Pale	4 or 5 a day	2 or 3 times	Natural	1024	Acid; no sediment
10	Chris. Field	14	Large, stout	Variable	Pale	Twice a day	2 or 3 times	Natural	1018	Acid; no sediment
11	Cope	11	Short, stout, and hearty	Good	Pale	Once a day	Seldom	Light amber	1018	Acid; urate of ammonia
12	Thomas	12	Emaciated	Variable	Natural	Regular	3 or 4 times	Light	1017	Saccharine, acid; urate of ammon.
13	R. Johnson	8	Short, hearty	Variable	Slight fur	Twice a day & painful	Twice a day	Natural	1016	Acid; no sediment
14	Gilmore	10	Short and thin	Good	Pale	Twice a day	3 times	Natural	1019	Acid; uric acid
15	Js. Brown	14	Healthy	Good	Coated	Once a day	3 times	Natural	1021	Acid; uric acid
16	G. Hackett	10	Stout, healthy	Good	Pale	Once a day	Twice a day	Natural	1026	Acid; uric acid
17	Casey	14	Light, healthy	Good	Natural	Constipated	3 or 4 times	Natural	1027	Acid; uric acid
18	D. Palmer	14	Thin, dark	Good	Pale	Once or twice	2 or 3 times	Natural	..	Acid; uric acid
19	Samons	14	Healthy	Good	Natural	Constipated	2 or 3 times	Natural	1018	Acid; uric acid
20	C. Hardy	13	Light and thin	Good	Pale	Constipated	Once a day	Natural	1020	Saccharine; no sediment
21	Pitts	11	Large and healthy	Good	Natural	Constipated	Twice a day	Natural	1010	Acid; no sediment
22	Sam. Johnson	10	Short, hearty	Good	Natural	Regular	3 or 4 times	Natural	1016	Acid; uric acid
23	John Baily	16	Stout, hearty	Good	Natural	Regular	3 or 4 times	Natural	1027	Acid; no sediment
24	Francis Stevens	8	Short, hearty & straight-haired	Good	Natural	Regular	Wets himself during the day	Light	1020	Acid; no sediment
25	Bunce	14	Large and dark	Good	Natural	Constipated	2 or 3 times	Natural	1020	Acid; no sediment
26	Wm. Halgaman	16	Thin	Good	Natural	Twice a day	3 times	Natural	1023	Acid; no sediment
27	Riley	8	Stout, hearty	Good	Natural	2 or 3 a week	2 or 3 times	Natural	1020	Acid; urate of ammonia
28	Alexander	13	Light, stout	Good	Natural	3 times a day	Wets his clothes	Natural	1019	Acid; urate of soda
29	A. Lopeman	15	Healthy mulatto	Good	Natural	Twice a week	3 or 4 times	Natural	1020	Acid; uric acid
30	Jas. Bond	..	Dark, healthy	Good	Coated	Not regular	2 or 3 times	Natural	1021	Acid; no sediment
31	Shafer	18	Good	Good	Coated	Regular	3 or 4 times	Natural	1015	Acid; urate of ammonia
32	John Lea	15	Tall & healthy	Good	Coated	2 or 3 times a day	2 or 3 times	Natural	1020	Acid; uric acid
33	Jos. Oliver	13	Thin	Good	Coated	Regular	3 or 4 times	Natural	1019	Acid; no sediment
34	Walters	12	Stout, dark	Good	Coated	Regular	4 or 5 times	Natural	1020	Acid; no sediment

in the Colored Department of the House of Refuge.

Special disease.	Frequency of habit.	Appearance of genitalia.	Secret vice.	Remarks.
No ascarides or other dis.	2 or 3 times a week	Prepuce much elongated	Denies any	Cured by bromide of potassium
Has ascarides	4 or 5 times a week	Prepuce much elongated	Denies any	Cured by belladonna, magnesia, and turpentine.
Has passed lumbricoid	4 or 5 times a week	Prepuce much elongated	Denies any	Cured by belladonna, magnesia, and turpentine.
No ascarides or other dis.	1 or 2 times a week	Prepuce much elongated	Denies any	Cured by bromide of potassium.
No ascarides or other dis.	3 or 4 times a week	Prepuce much elongated	Denies any	Cured by belladonna.
No ascarides or other dis.	3 or 4 times a week	Prepuce much elongated	Denies any	Cured by belladonna and magnesia.
No ascarides or other dis.	5 or 6 times a week	Prepuce much elongated	Confesses	Cured by belladonna.
Has ascarides	5 or 6 times a week	Penis and prepuce elongated	Denies any	Cured by belladonna and turpentine
Has cough, diarrhœa, & ascarides	5 or 6 times a week	Penis and prepuce elongated.	Denies any	Cured by belladonna and turpentine.
Has ascarides	4 or 5 times a week	Small	Denies any	Cured by belladonna and turpentine.
Has ascarides	Every night	Prepuce and penis elongated	Strongly suspected	Cured by belladonna and turpentine.
Has ascarides	3 to 5 times a week	Prepuce and penis elongated	Denies any	Cured by belladonna and turpentine.
Has ascarides	5 or 6 times a week	Prepuce and penis elongated	Confesses	Cured by belladonna, turpentine, and magnesia.
No ascarides	Once a week	Prepuce and penis elongated	Confesses	Cured by bromide of potassium
No ascarides	Once a week	Prepuce and penis elongated	Denies any	Cured by belladonna.
No ascarides	Once a week	Prepuce and penis elongated	Denies any	Cured by belladonna.
Has ascarides	Once a week	Prepuce and penis elongated	Denies any	Cured by bromide of potassium.
Has ascarides	Once or twice a week	Prepuce and penis elongated	Masturbates	Cured by belladonna and turpentine.
Has ascarides	4 times a week	Prepuce and penis elongated	Masturbates	Cured by belladonna, turpentine, and magnesia.
No ascarides	Occasionally	Prepuce and penis elongated	Denies any	Cured by belladonna, turpentine, and magnesia.
Has ascarides	4 or 5 times	Natural	None	Cured by belladonna, turpentine, and magnesia.
No ascarides	2 or 3 times a week	Prepuce and penis elongated	Confesses	Cured by belladonna.
Has ascarides	Once a week	Natural	None	Cured by belladonna and turpentine.
Has ascarides	3 or 4 times a week	Prepuce and penis elongated	Denies any	Benefited by belladonna.
Has ascarides	3 times a week	Prepuce and penis elongated	Denies any	Cured by belladonna, turpentine, and magnesia.
No ascarides	Once a week	Natural	None	Cured by belladonna.
No ascarides	Twice a week	Small	None	Cured by belladonna.
Has ascarides	Once a week	Prepuce much elongated	Denies any	Benefited by belladonna.
No ascarides	Twice a week	Natural	None	Cured by belladonna and magnesia.
No ascarides	Occasionally	Natural	None	Cured by belladonna and magnesia.
No ascarides	Occasionally	Natural	None	Cured by belladonna and magnesia.
No ascarides	Twice a week	Penis very large	Denies any	Cured by belladonna and magnesia.
Has ascarides	3 times a week	Prepuce and penis elongated	Denies any	Cured by belladonna and turpentine.
Has ascarides	3 times a week	Natural	None	Cured by belladonna and magnesia.

It will be remarked that the cases I have reported were confined exclusively to the male departments of the institution. No complaints were made to me at the time my attention was called to the disease amongst the boys, of its existence in the girls' department. This struck me at the time as somewhat singular, and I made inquiry on the subject, and, much to my surprise, I found that the disease was really confined to the boys, for there were but two out of the whole number of girls (about 80) in the house ever guilty of wetting the bed. These did it so seldom as not to be the source of annoyance or inconvenience. The average age of the girls was somewhat greater than that of the boys, and their general condition and health far better. I had very seldom occasion to prescribe for one of them, especially in the white department, during the whole six months. As a class, they were remarkably healthy, stout and ruddy. They performed the household duties, such as cooking, cleaning, washing, ironing, mending and making clothes for the whole house. They were occupied about five hours each day in school—had three hours for amusement, chiefly jumping of rope and swinging in the yard. They indulged in a great deal of singing at all times. They had the same diet as the boys. Morally they were no better than the boys—many of them, even of the youngest, had led dissolute lives. I had no way of determining with anything like an approximation to the truth the frequency or even the existence of masturbation amongst them. A vaginal examination in itself, if justified by my own conscience, or allowed by the Managers, would not have determined with accuracy the fact. I also made no examination of the urine in this department with the view of determining a cause of the difference between the two sex—my time was too much occupied for the purpose, with my investigations in the male department. My researches, therefore, as regards the influence of sex in this disease, were not as complete as might be desired, but they are at least in confirmation with the most generally expressed views, that the disease is most common amongst boys.

Dr. CONDIE said that the communication of Dr. Hewson was a most interesting one on a most interesting subject. Dr. Condie was pleased that so favourable an opportunity for the careful study of incontinency of urine, as it occurs in children, had been afforded the gentleman, and that he had been enabled so successfully to improve it. His communication exhibits the first attempt, so far as Dr. Condie was aware, to substitute facts for surmises, the results of close observation for mere hypothesis, in respect to the circumstances under which enuresis is met with in childhood, and the particular conditions of the patient with which it is associated.

Dr. Condie had been engaged for many years in an investigation of the same subject, but under circumstances far less favourable to the accuracy of the results than those which have occurred to Dr. Hewson. The cases observed by Dr. Condie were not placed under so close and careful observation as those of Dr. Hewson; for some of the most important particulars connected with them he had to depend upon the reports of parents, and often of ignorant and unfaithful nurses. He was pleased to find, however, that the results of his investigations, imperfect as they were in accuracy, corresponded in their general features with those which might be drawn from the cases observed by Dr. Hewson.

Dr. Condie, contrary to what he had anticipated when he began the investigation, found that incontinence of urine was much more common in boys than in girls. So far as his observations went, the disease or infirmity, whichever it may be, was less frequent among children at home than among those congregated in public institutions, boarding-schools for young boys, etc. In some of the cases observed by Dr. Condie, the incontinence was experienced throughout the whole twenty-four hours; the children being unable to control for a moment the inclination to urinate when it occurred, during the day or at night, and in the majority of these patients the inclination was experienced at much shorter intervals than is usual in children. In the majority of cases, the incontinence was experienced only during the night, and when the patient slept, sometimes every night, at others only occasionally. Dr. Condie had found the disease more common among children badly brought up—who were neglected in both their hygienic and moral training. In some cases, nocturnal incontinence of urine would appear to be the result of a careless, lazy, filthy habit; in such it might be cured by a cautious disciplinary treatment; but in the majority of cases, the incontinence was the result of causes altogether beyond the control of either the parents or the children; it was, properly speaking, a disease.

In cases of nocturnal incontinence, Dr. Condie had found the most effectual remedy to be the belladonna. He had frequently combined it with one or other of the chalybeate preparations, having, in numerous cases, found the enuresis to be connected with a cachectic condition of the system, or with symptoms indicating an impoverished state of the blood. In those cases in which the incontinence occurs in the day as well as by night, he had employed the tincture and extract of nux vomica, and occasionally strychnine, and though he could not boast of any great success in the treatment of such cases, yet, from the remedies just mentioned, he was certain that he had derived more advantage than from any other, and he had tried a host.

On one point the observations of Dr. Condie led to a very different result from those of Dr. Hewson; he alluded to the condition of the urine in children affected with enuresis. In thirty-two cases in which the urine was submitted to a careful and accurate examination, the saline ingredients, particularly the urates, as well as uric acid, were found to be deficient; there was an excess of the watery portion. This was more strikingly the case in respect to the urine of such of the children as were troubled with incontinence of urine by day and by night. Dr. Condie was induced to undertake the examination of the urine in consequence of the statement of Prout that in enuresis the urine contains an excess of lithic acid and its compounds. Willis had already, however, shown that the urine of those labouring under enuresis is of lower specific gravity than in health, colourless and watery, and deficient in the characteristic animal ingredients. Others have noticed the same fact, and, in the cases where the urine is more copious than in children generally, and the calls to pass it are at all times frequent, and uncontrollable for even an instant, they have described the affection as an infantile insipid diabetes.

Inability to Distinguish Colours.—Dr. Hays stated that he had recently met with a case of inability to distinguish colours, a brief notice of which might interest the fellows of the College. The case was interesting in two points of view: *First*, as it belonged to a class of cases of which but very few had hitherto been recorded, viz., in which the inability did not exist as a congenital defect, but was the result of disease; and, *secondly*, because it confirmed the law, pointed out some years since by the speaker, as existing in regard to these cases.

He had shown, 1st, that this defect may exist to such a degree that shades only could be distinguished, the individual having no perception of colour.

2d. In the next degree, the patient can distinguish only a single colour, and this is always yellow.

3d. In the next degree, the individual can distinguish two colours, which are always yellow and blue.

4th. In the next degree, the patient can distinguish three colours, and these are always yellow, blue, and red.

This was exemplified in the case of Mary Bishop, the particulars of which were recorded in the *American Journal of Medical Sciences*, for Aug., 1840, and confirmed by a comparison of numerous cases. (See *Lawrence's Treatise on Diseases of the Eye*, edited by the speaker, pp. 637–648, Phila., 1854.)

The subject of the present case was a man 35 years of age, who stated that, after an attack of fever and ague followed by violent attacks of colic, he had lost his sight. When he first began to regain this faculty he could only discern shades, but could not distinguish a single colour. As his sight improved, he noticed first the blue lining of his carriage, and some time afterwards was delighted to find that he could distinguish the pink lining of his coat.

When seen by Dr. H. he could distinguish three colours—yellow, blue, and red—but he was unable to state when he had regained his ability to distinguish the first, as that colour had not been presented to his attention. The three colours mentioned were the only ones he could distinguish; when a bright red and a bright green were placed side by side before him, he could not distinguish one from the other, but if one were of a deeper shade than the other, he readily detected this difference.

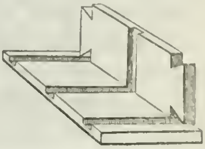
New Apparatus for Fracture of the Thigh.—Dr. Henry Hartshorne made the following remarks: Having been indulged with the attention of the

College, in 1855, to the exhibition of an apparatus for the treatment of fractures of the femur upon an entirely new principle, it is proper now to state, that a full and sufficient trial of that apparatus has, since that period, educed the conclusion that an important practical difficulty exists in its use, which must interfere with its extensive employment. This difficulty is, the necessity of adapting the *counter-extending block* exactly to the person of each patient; which would require more skill and trouble than are likely in many instances to be available. This trial has not, however, nor have any other facts or considerations, afforded reason to doubt the correctness of the principles involved in the construction of that apparatus; namely, that, for treatment of fractures of the thigh, the apparatus should possess fixity and *firmness;* that the extension and counter-extension should be *in the same line;* that their amount or extent should be under *easy and exact control*, and that the *tuberosity of the ischium* is the centre of the most desirable region for counter-extension, as it is the best adapted, by structure and function, for continued pressure.

In examining the excellent report upon the treatment of fractures, by Dr. F. H. Hamilton, in the *Transactions of the American Medical Association* for 1857, we do not find, in the number of contrivances for fractured thigh there described and illustrated, any which meets fully the indications above mentioned. That which possesses, perhaps, the greatest amount of novelty, the invention of the Drs. Burge, of New York, is rendered comparatively unavailable by its complexity and expense; especially as it does not really remove all the inconveniences of the treatment.

While, therefore, the absence of an apparatus for the management of this important fracture, equally complete with those employed for fractures of the leg or arm, remains to be an opprobrium of surgery, it is obviously desirable that experiments and attempts should continue to be made, even if many successive efforts should meet with disappointment; as, thereby, one difficulty after another may be removed, and final success be rendered more probable. With this view, I venture to offer to the College, at the present time, another form of apparatus, distinct in some particulars from any in use. The excuse for not withholding its presentation until after its subjection to a full trial in actual practice, is, the long period which might elapse, with one not specially engaged in the practice of surgery, before the opportunity for such trial should occur.

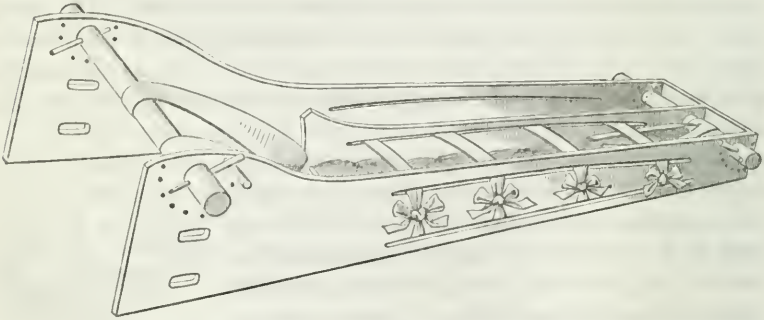
Fig. 1.



The apparatus consists (as exhibited) of two long splints, one of which is to be placed on the outer side of each limb, reaching from about the middle of the body to a distance of eight or nine inches below the feet, where the splints are firmly connected together by a foot-board having a bottom piece attached, into a groove in which each splint is made to slide, Fig. 1; the extension is maintained by means of a roller or windlass, and adjusted by a pin at the side, as in the apparatus exhibited by me to the College in 1855 (see *Transactions of the Philadelphia College of Physicians*, October, 1855); adhesive plaster being the preferred material for the extending bands. For counter-extension, a similar bar or roller is made to pass from splint to splint at their upper ends (widened and elevated accordingly) *over the umbilicus;* the adjustment and control being arranged in the same way as with the extension, by means of a pin through one of the holes on the outside of either splint. The ends of the counter-extending band may be fastened at pleasure to any part of the upper roller; most desirably, however, at a considerable distance from each other, so that the force exerted may be in a direct line with the extension, and may act only upon the gluteal and tubero-ischiatic region. This mode of counter-extension, by means of a crossbar over the body, was familiar to my mind in 1855, but was deferred in use from the hope that the gluteal *block* might be more simple and convenient. Adhesive plaster may be readily employed upon the plan now described. Dr. D. Gilbert, of this city, has recently reported several cases (*Am. Journ. of Med. Sciences*, Jan., 1858) in which he has successfully used adhesive plaster for counter-extension, with Physick's modification of Desault's apparatus. I have also made use of it to a sufficient extent to be satisfied that the difficulty of employing it with that apparatus, without producing serious tumefaction and irritation, is great, on account of the *direction of the pressure*, involving the femoral vessels and lymphatics almost unavoidably. If, however, the direction of pressure is changed or reversed, as it may be in the apparatus now under description, no such inconvenience can prevent the success of the adhesive plaster, for counter-extension as well as extension; and this, I think, may be regarded as a considerable point gained.

With the usual strips of Scultetus, and a flat, wide junk bag under the whole limb, from *just above* the heel to *just below* the tuberosity of the ischium, the apparatus may be viewed as, in its essential form, complete. But several additions may be still made to it, for particular purposes. A

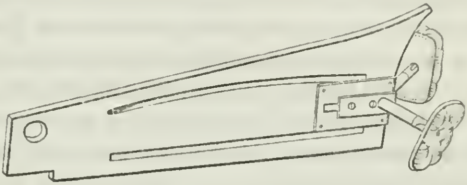
Fig. 2.



middle splint may be easily affixed to the same foot-board and bottom piece above alluded to, so as to afford means of *lateral* fixation of the injured limb. A bandage, or a *splint of gutta percha* may also be passed through slits in the outer and middle splints, for the still greater security of the limb in its position.

Moreover, the middle splint may be made the medium of counter-extension against *both* tuberosities, by affixing to its upper end a fork (adjustable by a slide and screw) upon the end of each of whose branches is a pad, revolving freely so as to adapt itself to the part, Fig. 3.

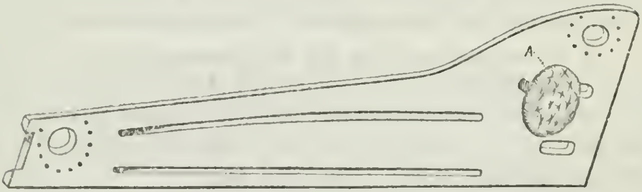
Fig. 3.



It is easy, also, if desired, to alter the method of counter-extension in any case, to that employed in Physick's Desault, by simply cutting holes in the usual position for them in the outer splint.

Farther still, we may adapt to this apparatus what appears to be the most original part of the apparatus of the Drs. Burge, viz: the arrangement for wedging the whole pelvis between two screws connected with the outer splints, and padded where they meet the outer surface of the ileum, Fig. 4, A.

Fig. 4.



By thus combining different elements, we have the opportunity, with the same apparatus, of using alternately *either of four* modes of counter-extension, viz: by the upper bar or roller, by the middle splint against the two tuberosities, by the perineal band of Desault, attached to the outer splint, and by the padded screws to fix the pelvis, as in the apparatus of the Drs. Burge.

Under such an alternation, or even with the counter-extension by means of the cross roller alone, it would seem impossible to fail in securing a sufficient degree of extension, without any risk of excoriation. The apparatus is, therefore, submitted to the profession, not without some confidence that it may answer a useful purpose, amongst, if not in place of the numerous methods of treatment already employed. It may be added that, in its simplest form, the expense and difficulty of its construction are no greater than those of Physick's Desault, while the facility of application, and of retention in place, is much greater. The same apparatus may, also, with slight variation, be used for patients of considerable variety of size and figure; and is adapted to the management of fractures of the leg requiring extension, as well as to those of the thigh. For compound fractures, requiring bran dressing, &c., it may be converted into a *box*, by inserting a bottom between the outer and middle splint, on the injured side.

July 7th. Cancer of the Clitoris.—Dr. Corse read the following:—

Early in July, 1857, I was called in consultation with Dr. A. O. Stillé to see Mrs. ———, æt. 66, who was suffering from a tumour in the upper commissure of the genital fissure. On examination, it was found to be about one inch in diameter, and attached centrally to the clitoris, and at its margin to the mucous membrane around. On inquiry, we learned that she had first begun to feel any inconvenience from it about a year previous. It was treated with caustics and entirely removed, or removed to such extent as to leave an excoriated ulcer where it had been attached; the ulcer did not heal kindly, but, after a prolonged treatment, began to throw out fungous granulations, which in time assumed the size and appearance of the original tumour. Excision was proposed, but deferred from time to time in the hope that an arrest of development in the tumour would take place. It was not long before the suffering from the incessant burning pain became almost intolerable, but an operation was not deemed advisable so long as the patient could get about and palliatives gave temporary relief. At length, the tumour increased to such a size that the patient was no longer able to walk, and was therefore confined to bed with the limbs distended. Her health now began to decline rapidly, and her constant suffering and helplessness made her an object of sympathy. Her family and friends entreated us to remove the tumour by excision, even if only temporary relief could be obtained, and in the belief that she could not be worse and live; we consented to remove it, and the operation was performed on the 24th of last May.

It had by this time grown to a considerable size and formed attachments all around the labia, and had pressed them so widely apart, that it was thought necessary to make the incisions in the sound parts beyond the tumour.

She was placed on a low bed in the usual position for the operation for stone in the bladder, and placed under the influence of ether, her hands being secured, one to each foot, as for the lithotomy operation. The incision was begun on the right side at the summit of the vulva and extended down to the perineum; a similar incision was made on the left side to the same extent to meet the former one. These rendered the mass movable enough to expose the extent of the attachment. The incisions were then deepened on each side to meet in the centre, excising the entire labia majora, minora, and clitoris. The hemorrhage was very great, considering there was no large vessel cut, although it was not altogether unexpected, for oozing tumours always have a large supply of bloodvessels.

In the operation for amputation of the penis, it is said, in works on operative surgery, that seven arteries are to be secured, and the same number in the operation for excision of the clitoris; but often some of these bloodvessels are practically found to be small and not to need any attention whatever. In the present case, they were large and required attention. As soon as the tumour was laid aside, the usually small arteries seemed to be welling out on every side; tannic acid was freely applied to the whole cut surface, and promptly checked much of the hemorrhage; the larger vessels were then picked out and tied, and caustic applied to some of the more obstinate oozing, especially at the descending rami of the pubes, where the clitoris obtains its blood from the internal pudics.

The hemorrhage being stopped, the wound was dressed with cold water. She soon reacted, and no capillary oozing to any extent took place.

Next morning I found she had passed a tolerably comfortable night, more so than for a very long time.

The wound went on to heal kindly, and the patient is now walking about enjoying her regular meals and hours of repose, and very cheerful in spirits.

Dr. Coates added some particulars to the history of this case.

Dr. C. visited Mrs. D—— M—— for an irritable ulcer of the glans of the clitoris, fourth month (April) 4th, 1855, and, of course, three years and three months since. The whole glans was converted into an irregular set of flat bands, covered externally with the natural epithelium, and comprising within them deep, burrowing ulcers, lined by a thick, white, adhesive matter. There was no fungus at any point, and no hardening. The colour was a little brighter than natural.

The pain of this affection was excessively severe, greatly increased by walking, or by the contact of the clothing, and entirely embittering the unfortunate woman's life. He recommended cautery with nitrate of silver, and poultices of conium or hyoscyamus, to be exchanged for other narcotics. He warned her that, unless a very rapid improvement should become visible, it would unquestionably be her interest to have the glans extirpated. She was unwilling to undergo any treatment; and did not, as far as he was aware, at that time, ever make trial of the narcotics.

Cancer of the Neck.—Dr. Corse reported the following case: Mr. ——, aged 70, applied to me in May, 1853, with a tumour on the right side of his neck, about an inch above the clavicle, and opposite the posterior border of the sterno-cleido-mastoid muscle. The shape of the tumour was fungiform, having a summit irregularly rounded and expanded. In size it was nearly as large as a hen's egg. Its base seemed to be attached not on but under the skin, as if it had had its origin in a very small point, and by development dilated, for its attachment, an opening in the skin, which seemed rumpled or corrugated around the edges. It was movable, and seemed to have its attachment in the subcutaneous areolar tissue, and the base extended under the border to the extent of two or three lines, giving a purple hue to the integument to this extent.

Its whole surface was moist and constantly pouring out a sanguineous fluid, which exhausted the patient. The pain from it was incessant, and rather of a burning than a lancinating character. No refreshing sleep had been obtained for several months, and the short periods of repose were disturbed by paroxysms of increased pain. The appetite was gone from the continual irritation, and the family and friends could only anticipate a fatal termination at no distant period. An operation was requested for the removal of the tumour, and after duly considering all the circumstances, and making a prognosis unfavourable, the removal was determined upon.

An incision was made entirely around the tumour, outside of the diseased structure, through the integument, and the base cautiously dissected out. During the dissection, the tumour was found to be adherent to the external jugular, and could not be separated; this latter was, therefore, cut off, and a section of it removed along with the tumour.

Almost from the moment of the operation the general health improved, and the wound healed gradually without a bad symptom, and no great cicatrice was left.

The patient continued doing well until early this spring, when the cancer made its appearance again in the same place, and was slowly increasing when an attack of dysentery closed his life about three weeks ago.

The history of this case goes to show that the operation prolonged the life of the patient five years.

Gout.—Dr. RUSCHENBERGER submitted to the inspection of the Fellows casts of the hands of a gentleman who had recently died of gout.

Both hands were very much distorted, and the fingers strongly directed to the ulnar side. The first and second phalanges of the right middle finger were enveloped in a gouty tumour, rising three-quarters of an inch perpendicularly from the bone, and about an inch and a half in its transverse diameter; the index and ring fingers were widely separated by it. The thumb was nearly immovable, and slightly turned inwards upon the palm.

Over the left metacarpo-phalangeal joint of the index was an ulcerated tumour, and another occupied the first and second phalanges of the left ring finger; it was not less than an inch and an eighth by an inch and six-eighths in extent. The palmar surface of all these fingers was distended by gouty deposits. The point of the left thumb rested permanently against the second joint of the middle finger, which was partly flexed. None of the small joints were free from this deposit, specimens of which were shown.

Dr. R. then read the following history of the case:—

M. J. B., native of Philadelphia, died April 26, 1858, aged 69 years and 11 months.

He had resided in Natchez from 1817 till the spring of 1841. He lived freely, but was never intemperate nor dissipated. The disease was hereditary.

His first paroxysm of gout occurred in February 1829, and was supposed to be a severe inflammation of the foot, consequent upon chafing it in a stirrup during a long and arduous ride. The treatment consisted in the local application of ice, evaporating lotions and saline purgatives. A second paroxysm in 1830 was recognized as gout. In the spring of 1833 he had a severe attack in this city, and was treated by a distinguished professor in the University of Pennsylvania. Another severe paroxysm was suffered in Philadelphia in the year 1838, when he was treated chiefly by copious venesection. In 1839 he was again attacked at Natchez. On that occasion the case was treated by tightly bandaging the limbs, and dry frictions with a hand, continued for hours without interruption.

Just after leaving Natchez in the spring of 1841 on a steamer, he was most severely assailed by the disease, and was put on shore at Louisville, Ky., where he was treated during six weeks with enormous doses of colchicum, from the effects of which, as it was supposed, he was very near dying.

From Louisville he came to this city by land, stopping some weeks at the White Sulphur Springs of Virginia, where he bathed in, but did not drink the waters. He was obliged to lie extended in his carriage during the entire journey.

He had moderate attacks every year, generally in the spring, and recovered from each more and more damaged in his powers of locomotion. The lithic deposits began from the first in the toes, ankles, knees and hands, gradually increasing. Three months before death they existed on the scrotum, on the ears and in the sclerotic coat of the right eye, as large as mustard seeds. Vision remained unimpaired, and, though he was a constant reader, never required the assistance of spectacles.

He first came under my professional care in October, 1841, and from that date while I was in the city, I visited him. During my absence he was usually attended by Professor Carson. He was also visited by Professor A. Stillé.

When I first saw him, his powers of locomotion were so much impaired that he did not leave his apartment, except at long intervals, when he was carried abroad in a carriage. Seventeen years were passed in his room, and the last ten years of his life were spent in bed.

In the commencement of 1857, he became unable to feed himself, and during a greater part of the year he was annoyed greatly by an eczematous eruption over the angle of the jaw and side of the neck, accompanied by intolerable itching. About the same period his appetite, which was usually good, began to fail, and in December he suffered almost daily from nausea and vomiting. He was no longer able to turn himself in bed, and the skin over the sacrum became abraded.

The bowels were habitually and obstinately constipated, and the dejections were always scybalous. They were constantly more or less distended with flatus, and this was frequently a source of excruciating pain. At times he discharged per anum incredible quantities of odourless gas. No variation of diet seemed to increase, nor did any remedy abate this flatulence, which was invariably augmented prior to a severe paroxysm of the disease.

A very great variety of laxative and purgative medicines were administered to obviate constipation, but no one of them or combination of them was satisfactory. In March, 1853, the following was prescribed, and met the requirements of the case so well that the patient preferred its operation to that of any laxative or purgative he had ever taken. These pills were used once, twice, or even thrice a week, during five years: ℞.—Colchici ext. acetic., Nucis vomicæ ext., āā gr. xxxvj; Potassæ bicarb. gr. xxiv; Tiglii olei ♏vj; Hyoscyami ext. gr. xlviij; Colocynth ext. comp. ʒij.—M. s. a. Ft. mass. in pil. xlviij dividend. S. One or two at bedtime.

Pain was almost constant. He found relief only in the use of opium, of which he took daily, for about eighteen years, from two to four grains, but never exceeded that quantity. He was a moderate chewer of tobacco, and drank about a fluidounce of whisky, largely diluted, every day after dinner.

The organs of respiration and circulation were never attacked. The last weeks of life were most painful. The stomach was irritable, except only when for a few hours in the day or night, he suffered severely in the joints. There was subsultus tendinum during five days; the gouty deposits were made to glide over each other by the jerking tendons, and suggested a notion that one was holding in his hand a small bag of moving marbles or large shot.

His intellect remained clear until within two or three hours of his decease, when he complained of pain in the head. The superorbital region presented suddenly an intumescence as large as a pigeon's egg, and then all evidence of consciousness was lost. His arms were tossed to and fro actively, almost until respiration ceased.

The parietes of the pouches formed about the small joints and beneath the toe nails by the lithic deposits, gradually ulcerated and gave exit to their contents. Small amorphous masses, the size of a pea and sometimes larger, of this mortar-like concretion, were often removed by the aid of lancet or probe, affording very great relief to the patient. These ulcers were exquisitely sensitive. Some of them were healed after discharging during three or four months, but simultaneously with their closure, other like fountains were opened either upon the hands or feet, which poured out tiny streams of globules that were often compared to those of a soft and broken shad-roe.

In the early years of the disease from which he suffered twenty-nine years, his temper was irritable and sometimes violent, but during the latter ten or twelve years, he so controlled it that no expression of impatience escaped his lips even while in agony of pain. This power of self-control his friends attributed to a conviction and abiding faith in the truths of Christianity as taught in the Presbyterian Church.

My friend Dr. Bridges has examined the matter deposited, and ascertained that it is constituted of uric acid and soda.

Typhoid Fever without Tympanites.—Dr. LEVICK remarked that most medical men must have noticed the difficulty of forming a positive diagnosis in the early stages of idiopathic fevers. Dr. Bennett, in his recent work on clinical medicine, goes so far as to say that "in practice it will be found impossible to distinguish the varieties of continued fever before the twenty-first day." This difficulty is of course increased by the absence of what are described in the books as the characteristic phenomena of each form of febrile disease.

A tympanitic condition of the abdomen is acknowledged by all writers on the subject to be an almost constant attendant of typhoid fever. Beginning as a slight meteorism towards the close of the first week, it sometimes increases to such an extent as to interfere with the respiration, and very much to add to the discomfort of the patient.

A case of typhoid fever was then under care in the Pennsylvania Hospital, in which this symptom had been entirely absent. The case was, with this exception, a well-marked one of this fever. The patient was then in the third week of the disease; the surface of the abdomen and lower part of the thorax presented numerous characteristic lenticular red spots, which disappeared on pressure; while the abdomen, instead of being prominent, was so flattened that a line drawn from the spinous process of each ilium left a marked concavity beneath it. There had been but little diarrhœa, but the bowels were promptly affected by small doses of laxative medicine.

Dr. COATES said, that at the time of his attendance in the Pennsylvania Hospital, the external duties of the institution, and other unavoidable demands on his time, were such that recording and numerically abstracting cases were out of the question. He well recollected seeing cases of undeniably dothinenteric typhoid fever, having all the other symptoms, and running the usual course of the disease, in which, however, the abdomen was not salient. He was confident of the existence of two such instances.

As meteorism is a physiological symptom, and must depend, for its amount and extension, on the degree of irritability, and on the size and proportions of the organs, it seemed accordant with sound reason that the mere fact of the abdomen projecting, in the prostrate position, beyond lines drawn from the anterior point of the costal cartilages to the spinous processes of the ilium, should not be considered essential to the presence of the affection in question. In the cases alluded to there undoubtedly existed distension of the intestinal tubes with gas, though not sufficient to cause the projection thus defined.

Dothinenteric typhoid fever may occur to an extent comparatively very moderate, and yet be fully identified. One case, during the above described period, went through a well-marked course in eleven days. It was indicated by slow approach, general debility, moderate meteorism, pain in the abdomen near the umbilicus, tenderness in the right iliac region, eruptions of both kinds, diarrhœa, some bronchitis, and some emaciation. The disease being mild, the loss of strength and flesh was not excessive.

Exhaustion from Heat (Sun-stroke).—In reply to a question on the subject from Dr. Bell, Dr. Levick made the following remarks upon some cases:—

From the 26th to the 29th of June, inclusive, there were six persons admitted into the Pennsylvania Hospital suffering from the effects of heat, or, as it is popularly known, from sun-stroke. The thermometer (Fahrenheit) in the shade indicated a temperature of 94°; while under exposure to the rays of the sun, the heat was intense.

The first patient admitted was a German, æt. 22 years. He had been at work for ten hours in a sugar refinery, boiling sugar; had been in good health until late in the afternoon, when he became giddy, fell, and was brought to the hospital in a state of insensibility. When admitted, he had a feeble and frequent pulse, and was with much difficulty made to swallow. The treatment consisted in the exhibition of ammonia, the application of ice to the head, the use of strong mustard foot-baths, and injections of turpentine. Next morning his intelligence had returned, and his recovery was rapid.

Two men were brought late in the afternoon of the following day. They presented symptoms almost identical, and may be described together. They were large and robust Irish labourers, about 35 years old, had been at work on the railway, fell over insensible, and were brought at once to the hospital. When admitted, the skin was warm, but not of that pungent heat which is sometimes noticed; the head hotter than the body; pupils somewhat dilated; pulse 130, and scarcely to be counted; respiration stertorous, and mingled with tracheal râles; the heart acting rapidly, but its sounds feeble; deglutition impossible. *Treatment.*—Strong mustard foot-baths, cold to the head, stimulating injections. Both died two hours after admission. An attempt was made, ten hours after death, to make an examination, but putrefaction had already occurred to such an extent as to render it impossible.

Case 4 was a captain of a small vessel on the Schuylkill River; fell over, was bled, and then brought to the hospital in a state of incomplete unconsciousness. *Treatment.*—Cold to the head, mustard foot-baths, and injections of oil of turpentine. This patient's recovery was a rapid one, and he left the hospital five days afterwards. On the following day he died suddenly, out of the house; but nothing could be learned of the nature of this attack.

Case 5. A Cuban, aged 28 years, a seaman, was admitted late in the afternoon. As was subsequently learned, he had walked from Richmond (in the upper part of the town), with mats for sale; that he felt giddy, things looked blue around him, and he fell over insensible. He was picked up in Washington Square, and brought in this state to the hospital. *Condition at time of admission.*—Skin warm, not hot; head warmer than trunk; pupils contracted; pulse 120 to 125; respiration sighing and moaning; deglutition impossible, liquids put into his mouth passing into the larynx. *Treatment.*—Cold to the head, mustard foot-baths, injections of oil of turpentine (f℥j) every half hour. Under this treatment a gradual improvement took place, and on the following morning he had so far recovered as to give the above account of himself. Two years before, he had had a similar attack while in Callao. After this, the improvement was rapid, and he left the house four days later.

Case 6. A seaman, aged 23 years, born in Ireland; admitted a few minutes after the last-named patient. *Condition at time of admission.*—Complete mental unconsciousness, with total inability to swallow; skin moderately warm; pupils nearly natural; pulse frequent and feeble. *Treatment.*—Same as preceding case. On the next morning his intelligence had returned, and he gave the following history of himself: He had walked from Fifteenth and Lombard Streets to Market Street wharf, felt some headache, then walked up Chestnut Street; became dizzy, felt as if drunk, then became insensible. This occurred at about 5 o'clock P. M.; an hour later he was brought to the hospital. He left the house, at his own request, four days later, entirely well.

Besides the above, six more patients were brought to the house as cases of sun-stroke. Two of this number were young hysterical women. In both instances they had walked a great distance, and had fallen insensible. The first of these presented so many of the symptoms of sun-stroke as to have been largely bled before she was brought to the hospital. Under the treatment above mentioned, her recovery took place, though but slowly. The second presented but few alarming symptoms, being a case of hysterical convulsions, in which the heat and fatigue seemed to be the exciting cause. A third case was that of an epileptic patient, whose attack was an unusually severe one, and was attributed by his friends to a long and fatiguing walk in the heat of the day. The fourth and fifth were cases of sun-stroke, occurring to labourers, under circumstances similar to those before mentioned, and presenting similar phenomena. Both of these recovered under the treatment already mentioned.

The last of the cases alluded to was a lad, æt. 17, employed on a canal-boat. He had been engaged during the morning in unloading coal at a wharf in New York, while doing which he complained of pain in the head, and fell over in a convulsion. He remained in a state of stupor, and was brought to Trenton in the canal-boat, unprotected, and thence by railway to Philadelphia. At the time of his admission he was in a semi-stupid state, but could be roused with some exertion. He had at this time ptosis of the right eye, with occasional delirium and other symptoms of inflammation of the brain, for which latter affection he was put under the use of calomel, in small and repeated doses, blister to the nape of the neck, &c. After death there was found extensive inflammation at the base of the brain.

There are two or three points of interest in the preceding cases, which may be briefly alluded to. It will be noticed that in all of these the attack occurred in the latter part of the day—from four to six o'clock P. M.—at a time when the exhausting effects of prolonged labour were likely to be most felt. With but one exception, and that by no means a positive one, every man was a foreigner. The subjects of these attacks were not, as might be supposed, persons enfeebled by age or previous sickness. Their ages varied from 17 to 40, the majority being between 20 and 30 years of age.

While the results were somewhat satisfactory, it would lead to false inferences were all the cases reported classed with those of sun-stroke, the mortality of which is known to be so fearful. Of the first six cases reported, it will be noticed, two were moribund at the time of their admission. Cases 5 and 6 were of the gravest character, genuine cases of sun-stroke, with the absence of one symptom which is justly looked upon as highly alarming—a hot, pungent skin. Cases 1 and 4 were of a very serious character, though not quite to the extent of those just mentioned. Of the remaining cases, two were well-marked instances of sun-stroke; while three, occurring as they did in epileptic and hysterical persons, can afford no information as to the ordinary phenomena and results of the disease.

So far as the pathology of the affection is concerned, we may at once say that the cases before us, with one exception, coincide in representing it to be a condition of exhaustion, rather than of stimulation or cerebral congestion. The last case would tend to confirm the received opinion that different conditions may result from the same cause, in this instance terminating in cerebral inflammation, in the others in nervous exhaustion. For these different conditions different modes of treatment are required, and the diagnosis of the two becomes a matter of the utmost importance; but there can be no doubt in the minds of all whose opportunities for observing such cases have been frequent, that in *by far the greater number of cases of sun-stroke it is depression, not excitement, which we are to combat.* To have bled in any of the cases mentioned, would have been worse than useless, even the case of cerebral inflammation having never been in a condition to permit the use of the lancet while with us.

The treatment adopted presents but little novelty. Stimulating enemata, where deglutition is impossible, have been long resorted to, but it is worthy of consideration whether there may not a special value attach to the spirit of turpentine in these cases. It is, to say the least, an interesting coincidence that the remedy which has been found of value in malignant fevers should be used with advantage in this disease, in which the blood presents after death much the same character as it does after typhus.

If one principle were more insisted upon than another in the treatment of these cases, it was the importance of avoiding any expenditure of the little remaining strength of the patient. With this view the foot-tub was placed in the bed, the patient remaining on his back. Though recommended in such cases, the full bath is not without danger. The chief indication for its use is in the stimulus afforded by the *hot* bath, for which in practice the *warm* bath is too often substituted. The removal of the patient to the bath-room is rarely effected without some exertion or resistance on his part, while the depressing influence of the *warm* bath may fatally exhaust the forces which barely maintain the balance between life and death. For these reasons none of the preceding patients were put in the bath.

It is somewhat surprising that so little has been said or written on this subject, for, excepting on the field of battle, it is rare that persons are in such numbers so suddenly and so hopelessly struck down while in the vigour of health, of strength, and of youth.

Dr. CARSON said, that in the summer of 1830, while he was resident-physician in the Almshouse Hospital, he observed a number of fatal "cold water" cases, as they were then called, which all appeared to be rather cases of exhaustion from heat and rum drinking than from the sudden imbibition of pure cold water. The great heat of skin was characteristic. These patients were, all of them, broken down from intemperance and bad living, and came from a very bad neighbourhood. The mortality among them was great.

Dr. T. H. BACHE stated that during the summer of 1853, while resident-physician at the Pennsylvania Hospital, he had attended a number of sun-stroke cases, and that the mortality was very great, hardly a single case recovering. The treatment adopted was a stimulating one; but, prior to admission, some of the cases had been bled.

When allowed by the friends, *post-mortem* examinations were made, and the pathological appearances noted at the time. He could not recollect the precise lesions observed, but might at a future time give an abstract of them to the College. One thing, however, he did remember; and that is, that they did not confirm the statements made by Drs. Pepper and Reed (vide *Trans. Coll.*, vol. iii. p. 100), in regard to softening of the heart.

Dr. BELL remarked, that cases of illness from heat might and did occur, which could not be fairly denominated sun-stroke. These cases might have symptoms of excitement, and might bear bleeding without serious injury. He referred to one instance in which free venesection had been ventured on, and yet the man recovered. Dr. Bell also related an instance of the rapid decomposition after death, which had been mentioned as characteristic of sun-stroke.

Dr. COATES well recollected the time when cautions against sudden death from excess in drinking cold water while the body was excited, and during the intense heats of summer, were thought of so much consequence as to be posted, by order of the Humane Society, on the pumps designed for public use throughout the city. Between 1814 and 1819, while he inhabited the Pennsylvania

Hospital, persons alleged to be suffering from this cause were frequently brought to the institution. They were, in nearly or quite every instance, visibly under the influence of ardent spirits; the remedy then advised by authoritative men and the employment of which was warmly seconded by tavern-keepers. It was the unanimous conviction of those who attended them at the hospital that their symptoms indicated disease of the brain, and, probably, congestion, rather than the spasmodic affection of the stomach described by Dr. Rush. This last, however, he had seen, but in very few instances. The cephalic cases received little other treatment than rest, silence, a gloomy room, cold to the head, mild stimulants to remote parts of the skin, laxatives, and a cool, abstemious, and sedative diet. The impression on his mind was that there was almost entire success. He had not examined the hospital records on this point, but he had no clear recollection of any death in such a case. Their patients of this class were generally young and in the vigour of life.

It had often struck him how exact a reverse to what might have been expected really took place when the use of ice became popular in Philadelphia. When the luxury was first made abundant and cheap in our city, the greatest terror of destructive effects from excess in its use by the young, ignorant, and imprudent, was almost universal; and the newspapers were thickly bestrewn with remonstrances against the imagined frequency of suicide by ice cream. Thus, while cold refreshments were few and moderate, they were charged with the production of sickness and with manslaughter; while, since they have become abundant and really excessive, the danger appears to have been forgotten.

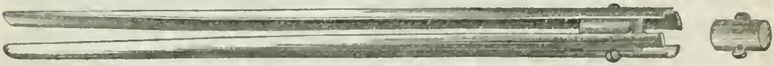
August 4. *Foreign Body in the Ear.*—Dr. Corse read the following report of a case of this:—

A little girl, aged 7 years, daughter of Simon King, was brought to my office with something in her ear. She had been to several physicians already, and the meatus auditorius externus was swollen, bloody, and inflamed. On examination by speculum, I was at first inclined to the belief that the parents were mistaken as to the existence of a foreign body in the ear; but they assured me that the object had been distinctly seen, and the little girl said it was a stone.

On further examination by means of a probe, I could feel a hard body at the bottom of the canal; and on further inquiry, I was informed that her ear had been pulled at very much, and that a considerable amount of blood had flowed from it. I then supposed the membrana tympani to have been ruptured, and that the hard body felt was the petrous portion of the temporal bone, for the probe did not cling to it as to a stone, or bone denuded of its periosteum. I have since been led to suppose that the slippery feel was due to blood coagulated or encrusted on the stone. I made efforts to move the body with a probe, but it was immovable. After a close and attentive examination, I was unable to make up my mind satisfactorily as to the precise nature of the case. The patient having a furred tongue and constipated bowels, I directed a purge and other treatment to keep down inflammation, and ordered the ear to be gently syringed several times a day with lukewarm water, requesting her to return to me the next day.

On their return, they informed me that a stone had been put into each ear while at play; and on examination of the other ear, I found truly a hard white body near the middle of the meatus. I cautiously tried to get a pair of forceps on it, but it constantly slipped from the grasp, and was soon at the bottom of the meatus. Mortified with my failure, I ceased my efforts, and directed the parents to return the next day, to continue the antiphlogistic treatment of the inflamed ear, and do nothing at all to the other one.

I was satisfied there was a foreign body, hard and round, in the ear, which filled the canal, or so nearly filled it that no forceps I was acquainted with could pass down on each side; it therefore became necessary to adapt some instrument to the case, and I drew a diagram of this instrument, which Mr. J. H. Gemrig, surgical instrument maker, Eighth Street, below Chestnut, has made for me. It consists of two blades and a fulcrum, the latter being separable from the former. Each blade should be $2\frac{5}{8}$ inches long, $\frac{3}{16}$ of an inch wide, and laterally curved so as to form a segment of a cylinder $\frac{1}{4}$ of an inch in diameter, in order that it would apply to the sides of the auditory canal. The blades should not be more than $\frac{1}{4}$ of a line in thickness. At first glance, this may seem too thin; but when the cylindrical shape is remembered, it is easy to perceive that the strength is thus greatly increased, while the small space we have to operate in renders a thick blade entirely useless. There should be a slit in each blade, at the outer end, $\frac{3}{4}$ of an inch long, and $\frac{1}{2}$ a line wide, for the shank of the button on the fulcrum to slide in. The fulcrum must be adapted so as to be movable, and have a button on each side adjusted to the slits in the blades, and thus secure them, as well as operate as a fulcrum. It must be $\frac{3}{16}$ of an inch in diameter, in order to separate the outer ends of the blades, and at the same time close the inner ones, and by this means more effectually clasp the foreign body. The blades ought to be graduated, in order to know how deep they can be inserted, lest they be pushed through the membrana tympani.



In using this instrument in very difficult cases, a blade must be applied anteriorly first, because the anterior side of the canal has a slight convexity, which makes it necessary for the outer end of the blade to be thrown strongly back, in order for it to pass the foreign body if large; then, by straightening it up, the body will be somewhat moved from the membrana tympani, and the danger of injury to it avoided. The other blade may then be applied posteriorly, and not pushed quite as low down as the first one. The fulcrum may then be applied; and to do so, the ends of the blades must be separated, and the fulcrum laid in the hollow and slid down until the buttons are locked in the slits on each side; then making pressure in the middle, with a gentle to and fro movement, the body may be withdrawn.

In appreciating the utility of this instrument, the shape of the cavity must be referred to. The meatus auditorius externus is described as an ovoidal canal about one inch long and three lines in diameter, part bony and part membrano-cartilaginous, and curved. It is somewhat constricted in the middle, and lined throughout by a membrane, which crosses the internal extremity obliquely and closes it, and constitutes the membrana tympani. The external extremity of the canal is overhung by a part of the external ear. It will be readily perceived that a foreign body of any considerable size, that passes the middle of the canal, will be much more difficult to remove, on account of the narrowing in the middle.

Dr. COATES remarked upon the difficulty, and the best mode of extracting foreign bodies from the meatus auditorius. The danger of injuring the membrana tympani rendered all instrumental interference more or less objectionable. He had thought that quicksilver might be employed with caution for the purpose; and he would now make the suggestion, as one of an expedient, at least, worth the trial. A small quantity only should be used, just enough to float the intruding body, without injuriously pressing on the membrana tympani. The only objection that he was aware of, was the possible existence of an opening in the membrane. Such an opening, however, would rarely occur; and might generally be suspected, when present, from previous symptoms which would be ascertained by inquiry.

Dr. CORSE thought that the quicksilver might answer for living insects, and for bodies not firmly impacted. He had removed the latter, and dead insects by means of strong jets of water from a good-sized syringe with a very slender nozzle, in the usual way. Insects, however, on account of the insufferable noise and pain occasioned in the ear, are generally killed with oil, and in dying fasten themselves with their claws, so as to be not easily detached. The quicksilver would be apt to fail in such cases. Dr. CORSE then dwelt at some length on the difficulties in the efficient use of the ordinary instruments.

Uterus taken from a Patient who had died, of Acute Disease of the Brain, whilst Menstruating.—Dr. W. W. GERHARD exhibited this specimen, and gave the following particulars of the case:—

Elizabeth Cook, æt. 25 years; English; married 7 years ago; has had two miscarriages and one still-birth; subject lately to menorrhagia, the discharge returning profusely every two weeks. She died of apoplexy, in the Pennsylvania Hospital, during one of her menstrual periods.

He was indebted to Dr. Packard for the following statement relative to the post-mortem appearances of the part exhibited:—

All the sexual organs were greatly reddened, especially the uterus, the left ovary, and the left Fallopian tube, which latter presented an enlargement near its fimbriated extremity. The inner surface of the uterus was of a very bright red colour, and the orifices of its follicular glands very perceptible; the mucous membrane seemed also to have a finely papillated or villous character.

The epithelium, being scraped off and examined under the microscope, was found to consist of a mixture of columnar and squamous cells. No evidence of any new formation could be detected.

The left Fallopian tube, carefully slit open from one end to the other, contained, in the dilatation above alluded to, a quantity of dirty red, grumous liquid, which, under the microscope, was found to consist of the ordinary ciliated columnar epithelium of the tube, and of masses of corpuscles, resembling nuclei; the form of the masses was very irregular, depending entirely upon the position assumed by the corpuscles.

At several points on the surface of each ovary, there were minute dots, like orifices, each one corresponding to a Graafian vesicle. Two of these being laid open, their contents were examined under the microscope, and found to present a few granular nucleated cells of considerable size, floating in a homogeneous liquid. Patches of extremely delicate squamous epithelium were found in the scrapings of the lining membrane of the vesicles.

Cancer and Abscess of the Liver.—Dr. Levick exhibited the liver of a woman, æt. 35, who had died a few days before in the Pennsylvania Hospital. She had been a nurse for many years, and was admitted into the hospital on the 26th of June. She complained, at this time, of a dull, dragging pain in the lower part of her abdomen, which she had suffered more or less from, since last Christmas, previous to which time, she said her health had for the most part been good. She was but moderately emaciated, pale, but not jaundiced. There was complete dulness, on percussion, over the entire region of the abdomen, which latter was tense and painful under strong pressure.

The ointment of iodine was applied to the surface of the abdomen, and the patient ordered quinine and nutritious food. A few weeks later, she was attacked with an eruption of large pustules, which appeared in such numbers that the whole body was covered with them, and the patient died, worn out with the exhausting effects of the discharge and suppurative fever accompanying it.

After death, the liver was found to occupy almost the entire cavity of the abdomen, measuring, as might then be seen, 19 inches in its vertical diameter, and 16½ inches transversely. A tape encompassing it longitudinally measured 30¾ inches, transversely 29½ inches. Its weight is 9¾ lbs.[1] It might be seen to be studded with masses of medullary cancer, varying in size from a pea to a large orange, presented a mottled nutmeg appearance, and was of a lighter colour than the natural hue of the liver. The surface of the organ, when first removed, imparted a sense of fluctuation to the finger, and the right lobe, when opened, was found to contain an enormous abscess, filled with fetid pus. A similar abscess, though smaller, was found in the left lobe. Cancerous masses existed in the pancreas, and a cyst, containing nearly a pint of fluid, was attached to the left ovary.

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[1] The ordinary measurements, as given in the books, are—vertical diameter about 7 inches, transverse diameter 10 to 12 inches, weight from 3 to 5 pounds.

REVIEWS.

ART. XIV.—*A Manual of Psychological Medicine, containing the History, Nosology, Description, Statistics, Diagnosis, Pathology and Treatment of Insanity.* With an appendix of cases. By JOHN CHARLES BUCKNILL, M. D., Lond., L. R. C. P., Medical Superintendent of the Devon County Lunatic Asylum, &c. &c. &c.; and by DANIEL H. TUKE, M. D., L. R. C. P., Lecturer on Psychological Medicine at the York School of Medicine, and Visiting Medical Officer of the York Retreat. Philad.: Blanchard & Lea, 1858. Pp. 536, 8vo.

THE connection of mind and body in its influence upon the manifestations of disease, demands more attention than it commonly receives from medical men. The physician should continually bear in mind that many of the causes of disease act through the mind, that many of its symptoms are mental, and that mental influences often, and we may say generally, have a great agency in either opposing or promoting the cure. All this is true even of the general range of disease. It is not merely when the brain, the organ of the mind, is directly affected, that mental symptoms are present, and mental care becomes a part of the duty of the physician. For, as every part in the body has a nervous connection with this organ, there is no ailment so remote from it that it is without the sphere of its influence, or that it exerts none upon it in return.

Although this view of the psychological relations of disease and its therapeutics be so obvious on the very face of things, there is no part of practical medicine which is so little understood. Comparatively few physicians make mental influence a prominent agency in the cure of disease. The great body of the profession have no conception of the necessity that a physician should be in the highest and best sense of the term a metaphysician—that he should understand the laws by which the operations of the mind are governed, the modifications of these operations caused by varying physical states, and also the physical effects produced by varying conditions of the mind. Mere glimpses of this department of medicine are all that are realized by most physicians as they go the rounds of their daily practice. They do indeed exert much mental influence upon their patients, without being aware of it, and some of them acquire at hap-hazard a good degree of skill in mental medication, as we may term it; but they do not rise to anything like an adequate conception of the extent to which such skill can be applied. It is only a few who make this a study as really as they do the application of drugs in the cure of disease, thus recognizing in full the important truth that the physician is not the physician of the body alone, but of a body inhabited by a soul, nay more, united with it by connections close and numberless.

With this general neglect of psychological medicine in its wide range, there is, of course, great ignorance of that particular department of medicine which may be especially entitled psychological, and which forms the subject of the book under review. Indeed ignorance of the one involves ignorance of the other. Insanity cannot be fully understood by one who does not study the mutual influence of mind and body in the whole range of disease. The unnatural separation of this subject from all other views of disease, engenders narrow and erroneous ideas. We apprehend that a large proportion of those practitioners who have had charge of retreats for the insane, have committed this error to a greater or less extent. And hence in part it is, that less practical information in regard to the treatment of insanity has been given by them to the medical public than we had a right to expect. The advantages of practice in hospitals for gathering accurate and extensive information are very great, and therefore lay upon the conductors of them high responsibilities in relation to the profession at large. That such responsibilities have not been as fully discharged in the case of retreats for the insane as in ordinary hospitals, we think cannot be denied; and one reason for this is that which we have given above. It is obvious that there has not been that common ground between the profession at large and the physicians of retreats for the insane, that there has been between the profession and other hospitals. Physicians having charge of the insane have been prone to consider themselves as standing somewhat aloof from common medical practice, and they have been so considered by practitioners generally.

The effect of such a separation is injurious to both parties. The general practitioner is led to take it almost for granted that he has nothing to do with insanity, but that it is to be wholly turned over to the care of those who make this their special study. He therefore knows but little about it. On the other hand, the physician of the retreat, narrowing his mind down to this subject alone, and shutting out from his view all else except what has most obviously an incidental relation to insanity, really deprives himself of the aid of much that can shed light on the subject to which he so earnestly devotes himself. It would be better for both to take a broader range of investigation. He who has care of the insane would be better fitted for this department if he cultivated the whole field of psychological medicine; and the ordinary practitioner would be better able to use all the mental appliances of his art in his daily practice, if he made himself thoroughly acquainted with the different phases presented by insanity.

But there are other reasons why the ordinary practitioner should pay more attention to the subject of insanity than is commonly done. He cannot avoid having something to do with the insane, and that too in the most important period of their insanity. At the very outset of many cases, the treatment is to be directed by him. Ignorance, therefore, on his part may occasion great damage to the patient, either by inappropriate treatment, or by the failure to do what is demanded by the case. As the physician goes his daily rounds, he sometimes meets with persons who are really insane, and yet are not supposed to be so by their friends. His duty is to reveal to them the fact, and to urge upon them the necessity of an early removal to some asylum. If he be ignorant on the subject, as many physicians are, he will fail to be of service in this way; and most disastrous results may sometimes come from the failure. In some cases where the insanity comes on insidiously, and the friends of the patient do not perceive its existence, there is danger that the malady will become immovably fixed before anything effectual be done. A physician of the requisite knowledge and discrimination may be of essential service in such a case, by revealing to friends its true character, and convincing them of the necessity of an immediate attention to it. A failure to do this has put many a case into the incurable lists of patients in our retreats.

We have often known insanity to be aggravated by the bungling management of physicians. This occurs more often in the use of mental than physical means, simply because medical men are more at home in the application of the latter. The plainest principles of common sense are often transgressed, not only by the friends of the insane, but often by the physician, in the mental influences exerted upon them. When such injurious influences are experienced by the patient for some length of time, as they are in cases where the fact of insanity is doubted week after week, and month after month, the case assumes a very bad character. Perhaps there is no one thing which so often produces an injurious effect upon the insane as deception. The practice of it is exceedingly common, and is sometimes connived at and even practised by physicians. We once knew a physician of high standing in the community to authorize a plan for getting a patient into an asylum by deception, which had a most obviously bad influence upon the case, making the insanity to take on at once a more decided and inveterate character. As the man was put into the retreat by trickery, he escaped from his confinement by trickery also; and as the same bad management was continued, his insanity was steadily increased till at length he ended his life by committing suicide.

The ignorance which many physicians show in regard to insanity is only to be accounted for by the very common neglect with which the subject is treated by the profession. This neglect is not confined to those who have a low rank, but is seen often in those who are prominent, at least in the eyes of the public. As illustrating this point, we call to mind now the case of an insane prisoner, supposed by the physician who attended on the inmates of the prison to be only obstinate and vicious, and therefore day after day put to harder work by way of punishment, who after a while made his insanity patent to all by killing one of the keepers. The evidences of insanity in this case were such, that although they might deceive an ordinary observer, they ought, one would think, to be recognized by any tolerably educated physician; and yet here was a physician better educated than most of the profession, having a prominent position in a very intelligent community, that did not recognize them. What is the explanation? Either he was most culpably careless in regard to the representations made to him of the case, or in common with most other physicians he had neglected to study the subject of insanity as being out of his sphere, or perhaps it was from both these causes conjoined that he committed the blunder.

There are many cases of a most interesting character that fall under the care of the ordinary physician in which, although insanity does not exist, yet the mind is so much affected, that skill in exerting mental influences is of great service; and the skill required is just of that character which the physician of the insane acquires by his study and experience. Of course, the study of insanity will help to give this skill to the ordinary practitioner.

It being then so important that physicians generally should have a competent knowledge of insanity, the question arises, what books can be used by them as guides in their studies and observations. There are many good books, but we think that there is none which will so generally answer the purpose as the one under review. And we are glad, therefore, to see this reprint from the English edition. Every physician ought to have some work on insanity, and, as most can afford to have but one, we would recommend this unreservedly as the best. It is sufficiently full; it is clear in its statements and descriptions, and very discriminating in its practical views.

We propose in this review to give the reader some idea of the quality of the work, and to comment upon some of the views of its authors, having for our object in part to bring the work to the notice of the profession in this country, and in part to develop some points in the subject of insanity which are of great practical interest.

The work is by two authors, Dr. Tuke giving the chapters on the history, nosology, description, and statistics of insanity, and Dr. Bucknill those on its diagnosis, pathology, and treatment. We do not fancy this copartnership in making books, unless there be a special reason for it, which does not appear in this case. We like generally to see a book having the character of an individual author stamped upon it throughout. When two unite in making a book, there is apt to be manifest an effort on the part of both to assimilate in style, thereby in a measure destroying the individuality of each. This fashion (for it is a fashion in book-making) seems to be becoming quite common, more so in England than in this country. One of the most learned and, at the same time, interesting books recently published is the work of two authors. We refer to Conybeare and Howson's *Life and Epistles of St. Paul.* In this book, as well as in the one before us, while the writers are both much better than ordinary, they have no such peculiarities as would prevent the assimilation of which we have spoken, or occasion any marked perception of the difference if the assimilation did not take place.

The first chapter, which contains a "Historical Sketch of Insanity among the Nations of Antiquity," though it has not much practical value, has some curious matter in it. It has some quotations from Plato, which show that he had the most confused and loose ideas of human responsibility. Indeed, we find in the following passages the doctrine, baldly stated, that man is wholly irresponsible. After accounting for diseases of the soul, as he terms them, he says:—

> "And indeed it may almost be asserted that all intemperance in any kind of pleasure, *and all disgraceful conduct*, is not properly blamed as the consequence of voluntary guilt. For *no one is voluntarily bad;* but he who is depraved becomes so through a certain bad habit of body, and an ill-governed education." "All the vicious are vicious through two most involuntary causes, which we shall always ascribe rather to the planters than the things planted; and to the trainers rather than those trained."

The following specimen of wild and bungling speculation about the physiology of the brain and the pathology of insanity is cited from Hippocrates.

> "Men ought to know," he says, "that from nothing else but thence (the brain) come joys, despondency, and lamentations. And by this, in an especial manner, we acquire wisdom and knowledge, and see and hear, and know what are foul and what are fair, what are bad and what are good, what are sweet and what unsavory; some we discriminate by habit, and some we perceive by their utility. By this we distinguish objects of relish and disrelish, according to the seasons; and the same things do not always please us. And by the same organ we become MAD and delirious, and fears and terrors assail us, some by night and some by day; and dreams and untimely wanderings, and cares that are not suitable, and ignorance of present circumstances, desuetude, and unskilfulness. All these things we endure from the brain when it is not healthy, but is more hot, more cold, more moist, or more dry than natural, or when it suffers any other preternatural and unusual affection. And we become MAD from humidity (*of the brain*). For when it is more moist than natural, it is necessarily put into motion, and the affected part being moved, neither the sight nor hearing can be at rest, and the tongue speaks in accordance with the sight and hearing. As long as the brain is at rest the man enjoys his reason; but the depravement of the brain arises from phlegm and bile, either of which you may recognize in this manner: Those who are mad from phlegm are quiet; and do not cry out or make a noise; but those from bile are vociferous, malignant, and will not be quiet, but are always doing something improper. If the

> madness be constant, these are the causes thereof. But if terrors and fears assail, they are connected with derangement of the brain, and derangement is owing to its being heated. And it is heated by bile when it is determined to the brain along the bloodvessels running from the trunk, and fear is present until it return again to the veins and trunk, when it ceases. He is grieved and troubled when the brain is unseasonably cooled and contracted beyond its wont. It suffers this from phlegm; and from the same affection the patient becomes oblivious."

The second chapter is on the "Opinions of Ancient Medical Writers on the Treatment of the Insane." It begins thus:—

> "Music is the first recorded remedy employed, so far as we are aware, for the relief of madness. That 'ancient musician,' of whom it has been said that he struck tones that were an echo of the sphere harmonies, 'took an harp and played with his hand; so Saul was refreshed and was well, and the evil spirit departed from him.'"

We simply remark that we doubt the propriety of thus summarily putting the wicked Saul among the insane. The evidence of his belonging in that category is at least insufficient.

There are in this chapter some curious examples of a very ancient recognition of the homœopathic doctrine, showing that this medical vagary was far from being original with Hahneman. Thus, Democritus says of hellebore—

> "I am persuaded that if to me you should give hellebore to drink as to the insane, it would be right that the insane should escape it; and, according to your art, you would have blamed it as being itself the cause of madness. For hellebore, when given to the sane, pours darkness over the mind, but to the insane it is very profitable."

So also in those times some recommended intoxication as a remedy for insanity, because madness is often caused by it. These are about as good illustrations as we hear at the present day of *similia similibus curantur* from the busy tongues of the refined lady and clerical patrons of this delusion.

There was some heroic practice in those days in insanity. Such measures as strong purgation, extreme abstinence, and free bleeding were quite in vogue. It seems from Cælius Aurelianus that bleeding was employed by some in his day to a fearful extent. Patients were often bled from both arms to syncope, and death was sometimes the result. He protested against such heroic measures, and, like Hippocrates and many other of the ancients, he has much practical good sense mixed with much that is sheer nonsense.

The next chapter, on "Modern Civilization in its Bearing upon Insanity," is an exceedingly interesting one. The conclusions to which the facts commented upon lead are very well summed up thus:—

> 1. That, while the greater facilities which exist in civilized countries for obtaining a knowledge of the numbers of the insane, and the greater degree in which the disease is recognized, render any just comparison very difficult, and tend to show a much larger proportion than is actually the case, there can be little doubt, nevertheless, after making due allowance for this source of error, that insanity attains its maximum development among civilized nations, remaining at a minimum among barbarous nations, as well as among children and animals below man.
>
> 2. That, having regard to the main causes of insanity, there can be no reasonable doubt that, in modern civilized society, these outweigh those circumstances which might be supposed to favour mental health; these unfavourable causes being principally the increased susceptibility of the emotions to slight impressions, consequent upon their constant cultivation, the abuse of stimulants, and the overwork to which the brain is subjected, especially in

early life, by an overwrought system of education—the higher emotions or moral sentiments, the lower propensities, and the intellectual faculties, being thus all subjected, separately or combined, to an amount of excitement unknown to savage tribes.

3. That, inasmuch as all civilization is, up to the present time, to be regarded as imperfect and transitionary, it does not necessarily follow, from the foregoing, that civilization, carried out to its perfect development—a civilization which should exactly temper the force of the emotions, moderate intellectual exertion, and banish intemperance—it does not follow, perhaps, that such a civilization as this would generate mental disease. Even such a condition of society as this, however (which, it is to be feared, will never be realized), would, we believe, present greater danger to the integrity of the great centre of the nervous system than a state of barbarism."

Much is said at the present time of the influence of over-study in schools in impairing the vigour of the young and laying the foundation of disease—mental disease with the rest. We think that too much stress is laid upon the *amount* of study merely. The *mode* of studying has much to do with the result. Education is made too much a drudgery throughout, but especially at the beginning. The mind is subjected to the tedium of learning things that it cannot understand, and hence the school-room is looked upon, for the most part, as a place of both mental and bodily torture. This ought not so to be. The school-room should be a happy place. It can be so if education be conducted aright. But to make it so, there needs to be a radical change both in the notions and habits of teachers, and in the construction of text-books. Such a change we believe is soon to be effected; and when it is done, it will be found that much more real knowledge can be acquired by the young without any damage to their health and their brains than is now acquired with this damage. The buoyancy of mind attending right methods of communicating knowledge is beneficial to body as well as mind; while the fretting and dissatisfaction occasioned by wrong modes, making mental labour a weariness, are depressing to both mental and bodily vigour, and hence dwarf both the intellectual and physical powers, and sow the seeds of disease both in mind and body. The defect pointed out as existing especially at the outset of education appears more or less throughout its whole course, and is, we have no doubt, a prominent cause of insanity as well as of other disease. We should like to enlarge upon this important point, but our limits will not allow it.

The general conclusion, that civilization is attended with more insanity than a state of barbarism, has been combated by a writer in the *Quarterly Review* with quite a formidable array of statistics. The statistics are of rather a singular character. The writer draws a comparison between the manufacturing districts of England and its agricultural districts, taking the former as representing civilized life, and the latter savage life. Of course, the assumption that an agricultural district in England fairly represents savage life is palpably false. The mental activity and the vices of civilization are both present in some measure even in the darkest and most secluded places of such a district. But, even allowing the truth of the assumption, Dr. Tuke entirely demolishes the conclusion of the writer in the *Review*. The writer, he shows, did not go far enough in his statistics, and so stopped short of the truth. He reasoned, as collectors of statistics often do, upon a partial view of the facts. He found that there was a larger number of *pauper* lunatics in the agricultural than in the manufacturing counties in proportion to the whole population. He then inferred that more persons become insane in the former than in the latter. This inference Dr. Tuke shows to be false. He does it by giving a full view of the statistics bearing on the point, instead of the partial view of the writer in the *Review.* He proves one fact which shows up the fallacy of this writer's inference, viz., that the proportion of paupers to the whole population is greater in the agricultural counties than in the manufacturing. Of course, where there are the most paupers there will be the most pauper lunatics. This is the only reason that there are the most pauper lunatics in the agricultural counties. The facts do not touch at all the question as to the number of lunatics in proportion to the *whole* population. If we are to make the number of insane paupers a rule in estimating the prevalence of insanity in the community at large, we must find the proportion of pauper lunatics to the number of paupers, and not to the whole population, as the writer in the *Quarterly* did, and then make this the basis of an inference. Judging in this way, Dr. Tuke finds that the average proportion of pauper lunatics to the pauper population, per 1000, is in the agricultural counties 18.37, while in the manufacturing districts it is 26.40. This is as we should expect, for the excitements of business in a manufacturing community are much more conducive to insanity than the comparative evenness and quiet of agricultural life. And yet we have no right to infer that the proportion of insanity in the pauper population is in exact conformity with that of the community at large, though it is probably near it, for there cannot be any great difference in exposure to the causes of insanity between those who become paupers and the population around them.

Dr. Tuke is more cautious than the flippant writer in the *Quarterly Review* in adopting conclusions, and thus remarks on the question whether there are more lunatics among civilized nations than among the uncivilized:—

> "Here, however, unfortunately, we are met by the absence of anything like reliable data upon which to proceed; for, however nearly we may be able to approximate to the numbers of the insane among ourselves, or in other civilized countries, there exists no parallel series of facts with which to compare them, among those nations which are in a state of barbarism. Nor can it, for one moment, be doubted, that the apparently greater extent of insanity among civilized nations (as well as the great apparent increase of insanity in recent times), is, in a great measure, satisfactorily explained by the obvious fact, that these, much more completely than barbarous nations, know of the existence of insane persons, and recognize mental disease as such. And there are various other reasons why uncivilized nations should appear to be less subject to insanity than is actually the case. Thus, weakly children, including imbeciles, would be generally neglected (except when regarded superstitiously), and among some nations (as the Esquimaux) put to death. The same remark attaches to the aged, who, on this account, rarely afford examples of superannuation."

He adduces, however, a great variety of testimony in proof of an affirmative answer to the above question, although the relative proportion of the insane in civilized and barbarous countries cannot be ascertained with any accuracy, and the statistics usually adduced for this purpose must be taken with many grains of allowance.

The fourth chapter, which is on the "Amelioration of the Condition of the Insane in Modern Times, especially in regard to Mechanical Restraints," is one of intense interest—painful in the extreme if we look only at the past, but exceedingly gratifying if we look at the present, and anticipate the future. Up to the year 1792, the insane were treated almost universally like wild beasts. That year was an era in the treatment of the insane, ever to be remembered with joy and gratitude; for it was then that Pinel struck off the chains of fifty-three patients confined in the Bicêtre, the results showing at once that the then common notion that chains were necessary to restrain the insane from violence was unfounded. But the progress of the reform thus begun was, as is the case with all other reforms, very slow. In 1815, twenty-three years after the grand experiment of Pinel, a committee was appointed by the House of Commons to investigate the condition of the insane in asylums, or mad-houses, as they were then called, and some of the developments were of the most astounding character.

We can hardly believe at this day that asylums for the insane exhibited such sad scenes as are described in the following quotation made by Dr. Tuke from a book entitled, *What Asylums were, are, and ought to be*, by Dr. W. A. F. Browne:—

> "Let us pass a few minutes in an asylum, as formerly regulated; and, from the impression made by so brief a visit, let us judge of the effects which years or a lifetime, spent amid such scenes, was calculated to produce. The building was gloomy, placed in some low, confined situation; without windows to the front, every chink barred and grated—a perfect gaol. As you enter, a creak of bolts, and the clank of chains, are scarcely distinguishable amid the wild chorus of shrieks and sobs which issue from every apartment. The passages are narrow, dark, damp, exhale a noxious effluvia, and are provided with a door at every two or three yards. Your conductor has the head and visage of a Carib; carries (fit accompaniment) a whip and a bunch of keys, and speaks in harsh monosyllables. The first common room you examine—measuring twelve feet long by seven wide, with a window which does not open—is perhaps for females. Ten of them, with no other covering than a rag round the waist, are chained to the wall, loathsome and hideous; but, when addressed, evidently retaining some of the intelligence, and much of the feeling which, in other days, ennobled their nature. In shame or sorrow, one of them perhaps utters a cry; a blow, which brings the blood from the temple, the tear from the eye—an additional chain, a gag, and indecent or contemptuous expression, produces silence. And if you ask where these creatures sleep, you are led to a kennel eight feet square, with an unglazed air-hole eight inches in diameter; in this, you are told, five women sleep. The floor is covered, the walls bedaubed, with filth and excrement; no bedding but wet decayed straw is allowed; and the stench is so insupportable, that you turn away and hasten from the scene."

Even as late as the year 1844, there were some asylums in England to which this description would almost literally apply. No wonder that one, who had been taken from one of these dens of torture and filth to a well ordered retreat, when asked by one of his friends what he called the place where he now was, replied, with great earnestness, "Eden, Eden, Eden!"

We would like to dwell here upon the non-restraint system now so generally introduced, noticing some of its necessary limitations, but we must hasten on.

The fifth chapter treats "of the Definition of Insanity, and of Classification." Dr. Tuke cites many different definitions of insanity, which are all unsatisfactory, and he very justly remarks that—

> "It is not in any definition of mental derangement that the student will learn what insanity really is." He also says, that "whatever definition of insanity is adopted by the student, it is all-important that he should regard *disease* as an essential condition; in other words, that insanity is a condition in which the intellectual faculties, or the moral sentiments, or the animal propensities—any or all of them—have their free action destroyed by disease, whether congenital or acquired."

Our author has struck here upon the grand point of distinction between insanity and those mental conditions which are so often confounded with it. Insanity is a disease—a corporeal disease. It cannot be predicated of mind alone; and the expression, mental disease, though a very convenient one, is not strictly correct. The mental symptoms of insanity do not result from the mind alone, but from the action of the diseased organization upon the mind. If this simple view of what is essential in insanity be kept in mind, it will aid us often in diagnosis. In all doubtful cases let the question come distinctly before us, whether the mental manifestations are the product of disease, of bodily disease, or are the result of cherished propensities or passions, or mental habits, producing only incidental effects upon the brain and nervous system, and not dependent at all upon any actual disease there. The question, we are aware, is often of difficult solution, and the evidence upon which it is to be decided is generally not of that palpable character which we have in ordinary disease. Still it is *the* question which we are really to decide, and the more definitely we have it before the mind the less apt shall we be to err.

All attempts to subject the different forms of insanity to a strict classification have utterly failed. It is impossible to make any thorough and systematic classification of diseases generally, for the simple reason that disease is in itself an irregularity. The most that can be done is to arrange them in groups according to their resemblances. The difficulty of classifying, even in this loose way, the diseases included under the term insanity is very great. We can only take some prominent salient points seen in cases that are well defined; and then we shall, of course, find that there are many cases which we cannot include strictly under any of the terms that we adopt. We can only approximate to the truth in giving a name to the form of insanity in such cases.

Dr. Tuke gives us rather an extended classification, but he remarks in regard to it—

> "We should, however, only employ these divisions as a chart by which we might shape our course for something like firm land, without allowing ourselves to be lost in the metaphysician's 'ocean of doubts.' They are after all only the points and headlands of a recently discovered coast, which navigators have but partially delineated."

It would seem from this, and some other things said in this chapter, that Dr. Tuke anticipates something better in the way of classification from future discoveries. But we think that there is little reason for such anticipations. There are inherent difficulties which no amount of discovery can wholly remove. Even if we could "determine with certainty the fundamental, radical, faculties of the mind," we do not believe with our author that we could "hope to possess a detailed and systematic nomenclature." If it were mind alone that is affected in insanity this would be a rational hope; but as the disease is one of the organization, manifesting itself through the mind, no such thorough classification can come from any supposable amount of knowledge of the mental faculties. Still, we have no doubt that improvements are to be made in the nomenclature of insanity, and much of the confusion of ideas which even now, with all our advance on this subject, is often attached to the terms employed, will be done away.

The next chapter is a long one, and treats very fully of the various forms of insanity. Although it is so interesting, we shall only notice very briefly what is said in regard to emotional or moral insanity. On the existence of this form of insanity Dr. Ray, as quoted by our author, says:—

> "It will not be denied that the propensities and sentiments are also integral portions of our mental constitution; and no enlightened physiologist can doubt that their manifestations are dependent on the cerebral organism. Here, then,

we have the only essential condition of insanity—a material structure connected with mental manifestations; and until it is satisfactorily proved that this structure enjoys a perfect immunity from morbid action, we are bound to believe that it is liable to disease; and, consequently, that the affective as well as the intellectual faculties are subject to derangement."

Accordingly we find that there are some cases of insanity in which there is not the slightest trace of any derangement of the intellect. Thus we meet with persons afflicted with melancholia who reason as well as they ever did, and have no hallucinations or delusions. Their insanity is as real as it is in others who, with the same melancholy, have the intellect more or less affected. In both classes of cases the organization is diseased; but the mental manifestations are different; in the one class the affective faculties being the medium of these manifestations, and in the other both the affective and the intellectual.

But not only may insanity be confined in its manifestations to the affective faculties, but it may also be confined to those propensities which are common to man and to the lower animals. But here we are treading on dangerous ground. Not only do we encounter here the prejudices of the community, who for the most part cannot understand how insanity can exist, leaving the intellect intact; but, on the other hand, there is great danger that real crime may be mistaken for an act of insanity, and thus may escape punishment. The very fact that a mistake of an opposite character has often been made, and irresponsible acts have been visited with the penalties due to crime, has a tendency, perhaps, to make us too ready to suppose insanity. At all events, there should be the most careful and pains-taking discrimination exercised in all doubtful cases, so that society may be properly protected, and at the same time the sad mistake of punishing an innocent insane man as a criminal may be avoided. Above all, we protest against that looseness of view indulged by some on this subject, which comes so near to ignoring the fact of human responsibility, and almost obliterates the distinctions between virtue and vice. The ultra ground which some physicians have taken in their testimony in courts of justice, has so shocked the prejudices of the community, or rather has so offended their moral sense, that they are led to look with suspicion on all medical testimony in proof of insanity, and so are prevented from readily accepting what is true on the subject. In this way science, falsely so called, may hinder the advance both of true science and humanity.

In the chapter on the causes of insanity we have quite extensive and valuable comments on statistics. Some of the fallacies to which the inferences from them are liable are brought to view.

"Thus if," says Dr. Tuke, "we take the number of clergymen and lawyers admitted at Bethlem Hospital during a certain period, we find them equal; and the inference might be drawn that they were equally liable to mental disease. The following table enables us to show the fallacy of such a conclusion. From this it appears that lawyers are about doubly liable (as might have been anticipated) to this disorder."

The table referred to includes in its calculations 10,000 lunatics. It does not give simply the number of insane furnished from different occupations. This would not show at all the comparative influence of these occupations in producing insanity. Suppose, for example, that, as in the case of the Bethlem Hospital, the number of insane from the legal profession was the same as from the clerical. But suppose, also, that the number of lawyers in the community was only half as great as the number of clergymen. Then plainly the inference must be that lawyers are twice as liable to insanity as clergymen are. The same can be said of comparisons between other occupations. Accordingly, in order to make this table correct in reference to the point in hand, the proportion given in relation to each occupation is that of the insane furnished from it to the whole number of persons engaged in the same occupation in England and Wales, and not to the 10,000 lunatics in their asylums.

The statistics of retreats have been very commonly appealed to as showing that males are more liable to insanity than females. But we think this very doubtful evidence. We apprehend that it would be found, on investigation, that there are more female insane persons taken care of at their homes than there are of the male insane. At any rate, the only satisfactory way of settling this question is to ascertain the numbers of both sexes that are insane in the community, both in and out of the asylums.

Some interesting conclusions are drawn from the statistics of one asylum in regard to the relative influence upon the sexes of certain prominent causes of insanity. They are given in the order of their frequency in each sex. The order is thus among males: 1. Abuse of alcoholic drinks; 2. Reverse of fortune; 3. Domestic troubles; 4. Loss of friends. The order is quite different among females: 1. Domestic troubles; 2. Loss of friends; 3. Reverse of fortune; 4. Abuse of alcoholic drinks.

We dismiss this subject of the statistics of insanity with the remark, that great caution is called for in making inferences from them, and that we are especially suspicious of the showing of all tables that favour strongly any cherished opinions of the framers of them. Statistics designed to show the great success of any asylum by a large percentage of recovery, and a small percentage of mortality, we consider of no value, knowing how easily adroit management in regulating admissions and discharges, and false representations of the actual condition of patients (made, perhaps, without a definite design), may secure a much better report than an asylum may be justly entitled to.

We come now to that part of the work which was written by Dr. Bucknill, and which is by far the most valuable portion of it, partly because it has a more practical character, and partly because it is more thorough and clear in its discriminations. He treats of three very important subjects: the diagnosis, the pathology, and the treatment of insanity.

He opens the subject of his first chapter (the eighth of the book) in this impressive manner:—

> "No class of diseases with which man is afflicted are so various in their manifestations as those known under the general term of insanity. No diseases present such an infinite variety of light and shade belonging to their own nature, or to their intermixture with other maladies, or to the influence of temperament, of individual peculiarities of habit, or of social position; and, therefore, the diagnosis of no other class of diseases taxes nearly so much the ingenuity and the patience of the physician. The diagnosis of almost all other diseases depends principally upon weighing the evidence afforded by physical signs and symptoms, upon evidence addressed to the senses; but in mental disease, it is, for the most part, dependent upon evidence which is cognizable by the intellect alone, and upon data which the senses furnish to us only at second hand. The physician is compelled to bring to this investigation, not only a knowledge of those functions which are subservient to the vegetative and animal life of the individual, but also a clear and analytical conception of those which collectively constitute mind. He must not only be a physician, but a metaphysician; not, indeed, in the almost opprobrious sense of this term, but in that better sense which designates a lover of truth, seeking to ascertain, not the essence of mind or any other unattainable abstraction, but the laws of mind, which are as regular as any other natural laws, and the knowledge of which offers to philosophy a wholesome and legitimate object of research."

After stating in a very clear manner some of the difficulties which often attend the investigation of the question whether an individual is insane, he proceeds to notice quite fully some of the elements which enter into the diagnosis. In his consideration of the change of habits and disposition in the insane occurs this passage:—

> "There is a latent devil in the heart of the best of men; and when the restraints of religious feeling, of prudence and self-esteem, are weakened or removed by the operation of mental disease, the fiend breaks loose, and the whole character of the man seems to undergo a sudden and complete transformation. Every medical man has observed the extraordinary amount of obscenity, in thought and language, which breaks forth from the most modest and well-nurtured woman under the influence of puerperal mania; and although it may be courteous and politic to join in the wonder of those around, that such impurities could ever enter such a mind, and while he repudiates Pope's slander, that "every woman is at heart a rake," he will nevertheless acknowledge, that religious and moral principles alone give strength to the female mind; and that, when these are weakened or removed by disease, the subterranean fires become active, and the crater gives forth smoke and flame."

While there is much truth in this, there are certainly some reservations to be made in regard to it; or, at least, the statement is so incautious, that some inferences are liable to be made from it which are false. The manifestations of insanity are often, it is true, more or less indicative of the lurking devil in the character, but they are never to be taken as the exact measure either of the evil qualities of the individual, or the strength of his propensities; and they are often, we are sure, totally inconsistent with both. We do not believe that they always come from "subterranean fires" previously restrained from bursting forth by "religious and moral principles." We believe that their character is often given to them by some purely incidental circumstances, and so far as they are so, they fail to indicate what is attributed to them by our author.

Our author's remarks on the physiognomy of insanity are exceedingly interesting, and his descriptions are very graphic. We will give but a single specimen.

> "In a greater number of cases, however, a remarkable peculiarity is observable in the physiognomy of the insane; this exists in a want of accord in the expression of the different features. This is often remarkable and characteristic, and reminds one of those children's toys, in which the upper and lower halves of painted figures are separable, and capable of being joined in fantastic reunion. Thus, the lower face of an alderman may be added to the upper face of a handsome woman; and upon the simpering mouth of the latter may be superadded the stern brows of a soldier. The effects produced by this amusing toy are only exaggerations of what may be observed in the insane. The expression of mouth often gives the lie to that of the eye and the brow; and while the whole features are full of expression, it is often impossible to designate truly that which is expressed. This is, perhaps of all, the most characteristic peculiarity of insane physiognomy, because it is only observed among the insane. It is, however, frequently absent in them; and the patients in whom this peculiarity is strongly marked, are probably less numerous than those in whom it is absent. Its presence, therefore, as a symptom of insanity is of considerable value; while but little weight can be attached to its absence.

Every one much conversant with the insane, must recognize the truth of the following remark:—

> "Altogether, the effect of mania, and, indeed, of all forms of insanity, is to stamp upon the patient a remarkable degree of ugliness; and there is no symptom of returning mental health more trustworthy and more pleasing than the restoration of personal beauty. Among the female patients of large lunatic

asylums, not a single good-looking woman is often to be seen, except those who are convalescent, or those who are enjoying a prolonged interval of tranquillity and amelioration."

We doubt whether Dr. Bucknill is correct in laying so much stress upon the "shrivelled ear" so common in insanity. He says of it that it "tells an undeniable tale of profound mental disease." Certainly other chronic diseases besides those which are mental often have this symptom. All that is needed to produce it is emaciation with a dry, harsh skin.

The remarks of our author on the distinctions between insanity and eccentricity are very discriminating, and we only regret that they are not more extended.

On the subject of monomania, Dr. Bucknill says that it is not a disease implicating a single *faculty* of the mind, but insanity on a single subject, while many of the faculties may be affected. He is very happy in his illustration of the distinction between the monomaniac and those who hold absurd opinions on religious and other subjects.

> "The difference between a Mormonite, a Princeite, a clairvoyant or a table-rapper and a true monomaniac, depends upon this, that in the former the absurd opinion is the natural consequence of ignorance and inaptitude to apply rightly the faculties of observation and judgment; in the latter, it is one of a train of symptoms of a pathological condition of the brain, and is consequent upon the well-known causes of such a condition."

Though the diagnosis is not always easy, the simple view of the grounds of it just given will help materially to decide the question. It is to be remarked, however, that there are many cases where the evidence is so confused and discrepant, that it is exceedingly difficult, sometimes impossible, to come to a settled decision, and farther developments in the progress of the case must be waited for.

Moral insanity we have already remarked upon in another part of this article. We regret that Dr. B. is not more full in regard to its diagnosis. After quoting the description which Prichard gives of it, he remarks :—

> "It would appear from this that, perhaps, the only diagnostic symptom between mere vicious propensities and moral insanity is the mode of causation. Moral insanity is always preceded by an efficient cause of mental disease, and there has always been a notable change in the emotions and propensities following, and apparently consequent upon the operation of this cause."

The strict application of this rule of diagnosis would put to flight many of the loose notions of some physicians on this subject, and would expose the groundlessness of some testimony that has occasionally been given with much confidence in our courts of justice.

We would be glad to comment quite largely upon the contents of the chapter on the Pathology of Insanity, but our limits will not permit it. We can only touch upon a few of the many points presented to our view.

We are pleased to find that a point which we strongly urged in the first part of this article is also urged by Dr. Bucknill in this chapter, viz: the importance on the part of the physician of the insane of extending his view beyond the mental manifestations of insanity to those which occur in diseases generally—

> "If he studies insanity alone," says our author, "he will be apt to fall into the common error of attributing its causation to some single pathological state, and his views will be as wrong as they are narrow."

The pathological conditions of the brain in insanity are various. Broussais would have it that there is always inflammation, even in spite of the testimony of autopsies. In many cases there is congestion, especially at the beginning. The proof of this offered by our author is given under four heads:—

> "First. By the exciting causes of many cases of insanity, which causes evidently tend to hyperæmia of the brain, and which in their more powerful operation frequently give rise to inflammation itself. Injuries to the brain, from blows, falls, or exposure to heat, if of a certain intensity, produce inflammation; if they be of a less intensity, in predisposed persons, they give rise to insanity. Repeated congestions of the brain from alcoholic drinks have a like effect. And finally, that frequent and unquestionable cause of congestion in all organs of the body, overwork of the organ itself, is a well-recognized and efficient cause of mental disease.
>
> "Secondly. The symptoms attending many cases of insanity, are those of cerebral congestion. The forehead and vertex are hot, the face flushed, the conjunctiva injected, the carotid and temporal arteries beat strongly. Sometimes there is pain in the head; more commonly there is a sensation of weight and dulness. Moreover, the general system suffers from that imperfect and undeveloped state of pyrexia which accompanies active congestion of any important organ.
>
> "Thirdly. Remedies which are efficient in the removal of congestion, are most beneficial in the early stages of many cases of insanity. Cold applied to the scalp by means of the ice-cap, cold lotions, or irrigations of cold water; leeches to the temples, and cupping to the nape of the neck; derivation to the intestinal canal by purgative medicines, or to the skin by warm baths; produce the most marked benefit in the early stages of mania, arising from the causes and accompanied by the symptoms above stated.
>
> "Fourthly. When opportunities occur to examine the post-mortem appearances of such cases before they have become chronic, and have passed into the conditions of atrophic decay, the appearances are those of congestion of the pia-mater, with deepened colour of the convolutions; sometimes, but not always, accompanied by punctiform injection, or general pinkiness of the white substance of the cerebrum."

The proof cited under the last head is not often to be obtained, because patients so seldom die while this state continues, the brain passing commonly into a condition the opposite of congestion as the case goes on. The congestion, it is to be remarked, is never the essential cause of the insanity. It often is present, as every physician knows, without producing this disease. It may be one of its exciting causes, or it may be a mere accompaniment. The insanity depends essentially upon some change in the brain of which we know nothing, the microscope itself failing to reveal it to us. But as congestion always aggravates the disease when it is present, it is important that the physician should be able to discover the signs of its presence, that he may apply the proper remedies for its removal.

In many cases the opposite of congestion, anæmia, exists. But the most common condition of the brain found in examinations after death, especially in chronic cases, is that of shrinking, a state in which there is something more than anæmia—there is atrophy or "degraded nutrition." This results from a variety of causes, only one of which we will notice in passing—the want of sleep. It is because the period of sleep is the time especially for the nutrition or repair of the brain and nervous system, that the deprivation of it has often so much influence in producing insanity, and in so many cases proves so great an obstacle to its relief. In many cases it is not the absolute want of sleep that produces the effect, but the sleep is so disturbed with dreams that the repair of the brain cannot go quietly on. It is the unquiet state of the insane, depriving them of rest, and especially of the rest of sleep, that makes opium the most important of all the drugs that are used in the treatment of this disease. And we are glad to see that the evidence in regard to its efficacy is so fully brought out in the concluding chapter, which is on the treatment of insanity. The testimony of Dr. Pliny Earle, of this country, cited by Dr. Bucknill, is very decisive on this point.

In regard to the general subject of the treatment of insanity, we remark that there has been the same disposition to narrow and exclusive views that has so much marked the treatment of other diseases. There are favourite remedies and modes, having each its warm advocates. Formerly much reliance was placed on active medication; but now the tendency is to the other extreme. Some go so far as to maintain that drugs should be entirely discarded, and that the treatment should be wholly moral, as they term it, making the word, however, to include much more than rightly belongs to it. Thus a late writer in the *American Journal of Insanity* declares, that—

> "He always acted upon the presumption that the patients needed no active treatment. The insane hospital is to the insane what the splint and bandage are to the fractured limb—merely to insure quiet."

To this Dr. Bucknill, who, we are glad to find, takes wide and discriminating views, and is truly an eclectic practitioner, very justly replies:—

> "But insanity is not quite like a broken limb, and the processes by which recovery takes place are more complicated than the mere growth of new bone. Quietness is all that is needed to set a broken bone, because it is known that with quiet the pathological processes are certain to be reparative; but it is not always so in brain diseases."

We are free to say, that an exclusively moral treatment must be better in its general results than the once popular active medicinal treatment. But a treatment mostly moral, but medicinal so far as the symptoms distinctly call for it, is better still.

We are persuaded that bleeding, and especially local bleeding, is at present too little used in the treatment of insanity, as well as in that of other diseases. The remarks of Dr. Bucknill on this point are so good that we must quote them.

> "We have never used the lancet in the treatment of insanity, but we must admit that cases do present themselves in which we have felt it our imperative duty to use leeches to the temples and cupping to the nape of the neck, to such an extent that the effect on the general system would not be much less than that of a moderate bleeding. One ought always to be suspicious of a universal general rule, and more especially so when it has been adopted in opposition to a previous rule of the same character. It is very easy to save ourselves the trouble of thinking, by giving in our adhesion to a dogma; and the man who, at the present time, is most ready to affirm, with inflexible pertinacity, that in no possible case of insanity is it right to bleed, would, had he lived seventy years ago, have been the man most likely to affirm that no case of insanity can be rightly treated without such bleeding. This, however, is not the spirit of philosophy, or even the courage of good sense which has the will and hardihood to think for itself. Men love to run into extremes; but when most in extremes, let us remember, that they are never altogether right, and never altogether wrong. It is probable, therefore, that although our forefathers were wrong in their abuse of the lancet, we are not altogether right in looking upon it as *taboo.*"

We have seldom met with a collection of so judicious views of the treatment of disease as are in this chapter presented of the treatment of insanity, and we would commend them to the careful examination of the profession, not only from their value in their special bearing on this disease, but also on account of their development of the true principles of the treatment of diseases generally.

Before concluding this article, we will touch upon one subject which we deem to be of great importance. It is the manner in which the question of an individual's sanity is often investigated in connection with criminal trials. It is commonly done in this way. Experts are called into court by the counsel on the one side or the other, or both, to testify at the time of the trial. This may be preceded by visits made to the prisoner by some of them. The objections to this are twofold—first, that if the case be at all a difficult one, the investigation is inadequate, all the data for the decision of the question not being gathered; and second, that the investigator is made, in spite often of the determination not to be, more or less a partisan for the side of the case on which he is called.

A case occurred some little time ago in New Haven which so well illustrates these points that we will briefly cite it. Willard Clark, the keeper of a grocery, became engaged to a young lady, who, after a time, dismissed him, and transferred her affections to a Mr. Wight, whom she married. In April, 1856, Clark went to the house where Wight lived, and shot him in the presence of the family, and then deliberately walked back to his shop. When the officer came for him, he, without compulsion, accompanied him to the jail. Nearly three months after the homicide, at the request of the lawyer engaged for his defence, Drs. Earle and Butler made Clark each two visits. They found him, as they thought, the subject of certain insane delusions, viz: that Mrs. Wight really loved him rather than her husband; that Wight married her for the purpose of ruining her, and that his (Clark's) mission was to destroy Wight in order to save her from destruction. Drs. Knight and Jewett were requested by the attorney for the State to visit Clark. Dr. Jewett attempted to have some conversation with him, but he refused to say anything to him unless his counsel should consent. The counsel did not consent, and so Drs. Knight and Jewett had no conversation with the prisoner. The attorney also wrote to Dr. Butler, asking him to visit Clark, and to give him his opinion in regard to his sanity. He briefly replied that he had visited Clark at the request of his counsel, and that he should be present at the trial. So the investigation of the mental condition of the prisoner was kept, so far as it could be, exclusively in the hands of the defence.

The trial came on in September. Drs. Butler, Earle, and Ray, were present, took notes of the testimony, and then testified upon the data thus gathered in addition to those obtained by Drs. Earle and Butler in their visits to the prisoner. Their opinion was, unequivocally, that he was insane, and, being acquitted on this ground, he has remained in prison ever since, simply as an unsafe person. And yet, notwithstanding this opinion and the verdict, we say that his insanity *was not proved at that time, and has not been proved to this day.* Dr. Ray confidently expected that his insanity would become palpable to all, and Dr. Butler predicted that he would be a raving maniac within a year. But two years have transpired, and Clark remains, so far as we learn, exactly the same.

The grand defect in the evidence of his insanity, as presented at the trial, was in the fact that during the three months immediately after the homicide there was not a lisp of these insane delusions of which Drs. Earle and Butler found him the victim. On the other hand, nearly all that he did say during that time, which appears in the testimony, indicated that he was governed by revenge. If these delusions had been present all this time, would he not have given vent to them from the outset, instead of reserving them three long months for the ear of Drs. Butler and Earle? Is there not some reason to suspect that they were trumped up for the occasion by the prisoner, and that the doctors were cheated? There is certainly enough ground for such a suspicion to leave us in doubt about the case, and to warrant the assertion that the question whether Clark is an insane man is wholly undecided.

The investigation of this question was not a thorough one. It was not such as should satisfy scientific men. The three months' gap in the evidence stretches over a period of the utmost importance in the investigation. Then, if at any time, when the homicide was a fresh event, and there had been no conference on the part of Clark with counsel, could his mental condition be ascertained. But a delay of three months gave him ample time to hit upon a plan for simulating insanity. Most persons, it is true, fail in such attempts; but that success is impossible cannot be asserted, and we can easily see how a man of Clark's mental character could, under the circumstances, succeed.

The difficulty in this case would have been avoided if the French plan of a commission of lunacy were in use in this country. Such a commission, appointed by the government, and acting wholly independently of either side of the case, would be unbiassed in their investigations. Moreover, as they would in every case begin their observations at once, there would be no such loss of the golden opportunity for observation as there was in the case that we have narrated. The investigations prosecuted by this commission in some cases in France are of the most rigid and varied character. If the case be at all doubtful, every possible test is applied; and full notes are taken as the investigation proceeds. Upon these notes the commission make their report under oath. These reports are esteemed by scientific men as of great value, and the conclusions at which the commission arrived are acquiesced in by the community. There is none of the feeling which so often exists in this country, that the question of insanity has not been fully and fairly investigated. We hope that soon the plan will be adopted among us, as the security of society and the interests of humanity and science demand it.

There are some other points in the legal relations of insanity which we would like to remark upon in connection with this subject, but it would make this article too long. W. H.

ART. XV.—*Clinical Lectures on the Principles and Practice of Medicine.* By JOHN HUGHES BENNETT, M. D., F. R. S. E., Professor of the Institutes of Medicine, and Senior Professor of Clinical Medicine in the University of Edinburgh. Second edition, New York, Samuel S. and W. Wood, 1858; pp. 951, 8vo.

SOME of the views and opinions set forth prominently in this second edition of Dr. Bennett's lectures, have given rise to much controversy and discussion. The epithet original may well be applied to our author; and, whilst we give him credit for being an original observer, we must commend his diligence in finding out and displaying to his readers the researches and results of those actively engaged in scientific labours, in Germany and France as well as in England and our own country. In a notice of the book published in Glasgow, he was especially and justly commended for making his countrymen acquainted with the labors of German pathologists. And, indeed, the value of the volume is in the collection of the newest results and opinions of the most active, successful, and trustworthy scientific men of all countries. At the commencement of the third section we are told—

> "In the previous two sections I have endeavoured to give a condensed account of the present state of diagnosis, and of the pathology of organic diseases. A practical knowledge of the one, and a better appreciation of the other, it seems to me, have been very widely diffused within the last fifteen years. In consequence, a change, almost amounting to a complete revolution in our treatment of disease, has, within that short period, taken place. It is true that this change is not yet reflected in our systematic works, although clinically it is everywhere recognized. For when we compare what the actual practice of medicine is, with what it was, or with what it is represented to be, even in modern books on the theory and practice of medicine, the discrepancy must strike even the least observant. It seems to me that the time has now arrived for calling the attention of the profession, and more especially of its youthful members, to the causes producing so important a result, and pointing out some of those principles on which an improved medical art for the future is likely to be based."

Dr. Bennett commences with some remarks on the relation of the science to the art of medicine. He considers the remarks of Cullen, "that the truly judicious practitioners and good observers are such as have the most extensive views of the animal economy, and know best the true account of the present state of theory, and therefore know best where to stop in the application of it," as even more applicable now than when they were written. At the same time, he admits that medicine still belongs to the inexact sciences; it still possesses no primitive fact, though it be possible that it may do so at some future time. Several pages are next devoted to the means of exploration, and here we find are valuable illustrations, enabling the student to understand the use and application of the pleximeter, the stethoscope, and the microscope. The use of chemical tests is set forth briefly, and then our author brings forward what he has to say on the principles of medicine. His remarks on the nosologies of early writers are very true. He very properly calls attention to the difficulties from the use of terms introduced when symptoms were regarded as constituting disease, at the present period, when we are learning so much of the intimate structure of the various organs of the body, and regarding disease as a derangement or disorder of some part or organ.

> "In endeavouring to carry out this distinction, however, modern physicians have fallen into a great error, inasmuch as they have continued to employ the nomenclature of our forefathers, and use words which were simply expressive of symptoms, to indicate the altered condition of organs, the cause of those symptoms. Formerly, inflammation meant the existence of pain, heat, redness and swelling; it now means certain changes in the nervous, vascular, and parenchymatous tissues of a part. Formerly, apoplexy meant sudden unconsciousness originating in the brain; now it is frequently used to express hemorrhage into an organ; and, hence the terms apoplexy of the lungs and of the spinal cord. The two ideas are essentially distinct, and bear no reference to each other, because the same word may be, and often is employed under circumstances where its original meaning is altogether inapplicable. Hence it is incumbent on every one who gives to organic changes words which have been long employed in medicine, to define exactly what he means by them. In this way, old indefinite expressions, though still retained, have a more precise meaning attached to them. If, for instance, it be asserted that bleeding cuts short an inflammation, let us understand what is cut short; the symptoms, the physical signs, a congestion of the vessels, or an exudation of the liquor sanguinis."

Our author now dwells on the general laws of nutrition and innervation in health and disease. He tells us that—

"The various modes in which nutrition becomes impaired, and the blood diseased, can only be understood by passing in review the different steps of the nutritive process. We have already pointed out how pathology and practical medicine must be based upon anatomy and physiology, and there is no one subject, perhaps, which is so well capable of illustrating the proposition, as the one we are about to consider. For ages medical men have been in the habit of considering the blood to be the primary source of numerous maladies. It will be our endeavour to show by an analysis of the process of nutrition, that the changes of the blood, and the diseases which accompany them, are, for the most part, not primary but secondary; that is to say, they are dependent on previously existing circumstances, to the removal of which the medical practitioner must look for the means of curing his patient."

We soon come to an account of inflammation, which is thus introduced:—

"Not unfrequently this attractive and selective power in the tissues is deranged, producing increase or diminution in growth or secretion, general or partial. Not unfrequently the selective power appears to be lost, and the attractive power so much increased, that the liquor sanguinis is drawn out through the vessels, so that its fibrin coagulates in a mass outside them. This result, preceded or accompanied by certain changes in the vessels themselves, and more or less stagnation of the current of blood, constitutes the phenomena hitherto described as *inflammation*. Under these circumstances, other cells and tissues, altogether foreign to the healthy condition of the economy, are produced by what is now called the exudation, although the same general laws of growth and transformation preside over the abnormal as over the normal products. In this manner pus and cancer cells may be formed, or fibrous, cartilaginous, osseous, and other tissues, causing different kinds of morbid growth."

This word exudation is preferred by Dr. Bennett to inflammation. He quotes Andral's remarks: "Created in the infancy of science, the expression inflammation, altogether metaphorical, was destined to represent a morbid state, in which the parts appeared to burn—to be inflamed. Received into general language without any precise idea having ever been attached to it, in the triple relation of symptoms which announce it, of the lesions which characterize it, and of its intimate nature, the expression inflammation is become so very vague, its interpretation is so very arbitrary, that it has really lost its value; it is like an old coin without an impression, which ought to be removed from circulation, as it only causes error and confusion." Dr. Bennett claims for the new term exudation of the liquor sanguinis that it is a demonstrative fact and gives rise to a definite idea. Hence he would substitute for all scientific and practical purposes the expression exudation for that of inflammation.

Words used for centuries are not easily to be laid aside and new ones substituted, without commotion. The controversy in this case has arisen with regard to the application, to the carrying out of the idea. The disease inflammation was treated antiphlogistically. The blood being circulated more rapidly, being unduly determined to a part, to take blood from the system was a very natural conclusion. But, exudation does not suggest venesection, leeches or cupping. The exuded matter is not to be removed artificially, but, by the appropriate organs of the body, which must not be weakened by the loss of blood, but must be stimulated to greater activity, and well nourished to be able to sustain the increased efforts. Dr. Bennett brings out strongly the fact of the disuse of bloodletting which has taken place within the last twenty years. All admit a very great change in the treatment of what were and are still known as inflammatory diseases. The question is, have these diseases changed their type; are our bodies and constitutions different from what they were twenty years ago? are we living under different influences, modifying the processes of nutrition and innervation, so that when we are diseased we may not be subjected to the same treatment. All our early writers have dwelt upon epidemic influences to be considered in treatment, have pointed out peculiarities of time and season as modifying disease, so that the same disease must be treated differently at different times. We may begin with Hippocrates, and trace in the writings of the distinguished authors who have been consulted and followed in all subsequent periods, the enunciation of a fact of observation of the variations of disease, even in the same locality, at different seasons. Now, it seems to us that Dr. Bennett does not sufficiently recognize this truth. The word inflammation may be more purely conventional, and tell no story of the nature of what it designates. But, neither are all processes set forth in the word exudation, which Dr. Bennett would include under the term. We are still far from understanding so completely the morbid processes included under the terms exudation and inflammation, and we cannot decide by a process of reasoning as to the efficacy of different modes of treatment. We cannot prove in this way that inflammation may not be properly treated by bleeding. We must still learn by experiment, and we have no right to condemn totally the practice of our predecessors in treating by general and local bleeding what they called inflammation. Atmospheric or telluric causes of disease are still to a great degree unknown, but we do find and can appreciate changes in modes of life, which must act upon the human constitution, and influence its susceptibility to the causes of disease, which must produce variations in the history and symptoms of disease. For instance, it is admitted by all that we are living much faster. We move over the earth at the rate of thirty or forty miles an hour; intelligence is being conveyed to us from all parts of the earth with a wonderful rapidity, and the lightning messenger is sometimes charged with deadly news. There is everything to stimulate our nervous systems. Population is being concentrated in cities, competition is greater in professions and trades, fortunes are lost and won with a rapidity before unknown, and civilization calls for a great expenditure of nervous power. There is a disuse of the manly games, of the trials of strength in leaping, wrestling, throwing the bar, in which our ancestors, particularly those living in the country, delighted; recreation is now sought in crowded assemblies or lecture rooms. More are occupied in indoor pursuits. Luxury with its enervating influence is spreading widely. In our own country we are building houses for warmth, smaller and tighter than those of our ancestors, where for several months of the year we are subjected to air heated and burnt by passing over hot iron. The open fireplaces, and the generous wood fires, are fast disappearing. Now all these changes must have a great effect on nutrition and innervation. Muscular exercise in the open air, a quiet, regular life free from excitement, are certainly most favourable circumstances for the formation of a well purified, abundant blood, and for the activity of all the processes of nutrition. We are speaking of causes more efficient in our own country, but which are to a greater or less extent operative in all civilized lands. Our free institutions must be carried on with great expense of nervous power. Agitating political questions are constantly before the minds of the people. By frequent elections the honours and emoluments of office are brought within the reach of, and excite hopes and fears in a very large class of the community. By the growth of large cities, physical causes, in a diminished supply of fresh air, in a less perfect removal of, and a greater exposure to, the excrements and exhalations of the human body, are more widely at work to diminish the vigour of the constitution. We must admit, too, that in the government of our large cities there are corrupting influences on morals, which must react on the physical nature. We are hearing a great deal of the river Thames, and of the poisonous exhalations from it; we hear a great deal of the corruption and mismanagement of the municipal government of the city of New York, and we may be sure that deteriorating influences, more easily recognizable in those large cities, are, to some extent at any rate, active in the smaller towns scattered through the length and breadth of our own country, of Great Britain and of France, and, perhaps, to a less extent, of the other European countries. The rapidly increasing population of London and Paris, and generally of large cities, the decrease of the rural population, are phenomena of our own time which are exercising influences over nutrition and innervation. At the same time that population is being more concentrated, and that the nervous system is more stimulated, that there is less of out-door life, there is less exposure of many to atmospherical vicissitudes. More attention is paid to the hygiene of cities. The comforts, as well as the luxuries of life are being more widely diffused. Have we any right to say that these important changes in circumstances and conditions have no modifying influences on the processes of inflammation. The traveller who arrives in this country from England remarks at once the absence of the ruddy, full face to which he has been accustomed, and notes the pale, sallow, and care-marked countenance, the more rapid step, the greater devotion to business. It has been said that the production per head is greater in America than in any other country, and this can be brought about only by the expenditure of nervous force. At the same time, too, the material for nutrition abounds, but the nervous power needed to assimilate the aliments is spent in thinking, fretting, or slaving. Surely the great poet was not wrong in his physiology when he makes Cæsar to remark on Cassius that he has a lean and hungry look, and thinks too much. These causes do modify nutrition and innervation; they must modify healthy—they must modify diseased processes; they must necessitate a modification of therapeutic influences; and they are characteristic not solely of our country, but of our age. And we must not entirely set aside atmospheric and telluric phenomena, but must acknowledge an influence on the economy in health and disease which we are far from fully appreciating or understanding. We cannot, then, coincide with Dr. Bennett in attributing the disuse of bleeding solely to an improved pathology. We must allow the testimony of Dr. Alison and his supporters to a change of constitution, to a modification of disease, in virtue of which bleeding is less in repute than it was twenty years ago. At the same time that we recognize truth in what has been said by Dr. Alison and his supporters, we think great credit is due to Dr. Bennett for the great ability with which he has brought forward his propositions, and the valuable group of facts which he has collected in their support. We must admit that we are learning more of the nature of "inflammation," that we know better how to treat it. We are progressing in knowledge in the departments of pathology and therapeutics, though we are still far from a perfect comprehension of the many matters in those domains. It has been said even that therapeutics is suffering from a change of views in pathology, resulting from modern investigations and discoveries, which bring discredit on modes of treatment without pointing out better substitutes. We are still as it were in the twilight of knowledge, and our views are indistinct and uncertain. We sometimes see enough to make us afraid of remedial agents commended by what may be called an unreasoning experience, and yet when we try by reasoning to solve a therapeutical problem, our failures are signal and repeated. We may recognize in the word inflammation a purely conventional term, we must acknowledge that the ideas suggested by it are erroneous, and have misled those who sought to carry them out in practice. We can no longer look upon bleeding as the sovereign remedy for such affections. We have statistics enough to prove that it is much less efficacious to arrest and control pneumonia or pericarditis than was formerly supposed; yet it seems to us that we must assign some agency to peculiarities of modes of life, of states of the soil, of the atmosphere in modifying the susceptibility of the economy to inflammation on the one hand, and to bleeding on the other; and here we must differ from Dr. Bennett. We can discover truth in what has been written by Dr. Alison of the changes of constitution, and, at the same time, we can admit the correctness of Dr. Bennett's conclusion, that the older practitioners were led to use venesection too freely by pathological views which modern discoveries have shown to be erroneous.

The chapter on The Morbid Growths of Texture is clearly written and well illustrated by plates, making it a valuable means of information to the student. Dr. Bennett says truly—

> "That the exclusive study of morbid growths sometimes, as they affect internal, and at others external parts, has led to limited views of the subject. The surgical tendency, to speak of them as tumours, and to regard them in reference to the great practical question of excision, has interfered with the true pathological doctrine, namely, that however or wherever produced, they are essentially the same. No doubt they are very common in external parts, simply because all growth proceeds best on surfaces where there is room for expansion: but this accidental circumstance should not induce us to suppose that they are peculiarly surgical. In truth, their study belongs to pathology —that science which constitutes the basis of all branches of the medical art."

The classification of morbid growths has been found very difficult, and our author tells us that the hope has proved vain that, by studying the ultimate structure and mode of development of morbid growths, a new foundation for classification would be discovered. He thinks that structural elements may be reduced to six. 1st. Molecules and granules; 2d. Nuclei; 3d. Cells; 4th. Fibres; 5th. Tubes; and 6th. Crystals or irregular masses of mineral matters. He thinks that no combination of these elements will serve to characterize morbid growths, and he thinks the microscope destined to be of infinite importance in pathology and diagnosis by its aid in a careful investigation of the mode of arrangement of these elements; but to this must be joined a careful study of the clinical facts of each case. These growths, often containing several alimentary principles, chemistry cannot give a basis of classification.

> "The best classification, therefore, is one founded on our knowledge of the compound textures of the growths themselves, assisted, as far as varieties are concerned, by their similitude to well known objects or accidental circumstances, which have long been received in pathology as standards of comparison."

Dr. Bennett objects to the terms innocent and malignant, as almost every kind of growth may be innocent in some cases and malignant in others; but he approves of names taken from the anatomical character, as fibroma, lipoma, epithelioma, or from resemblances to well known objects, as hygroma, atheroma, sarcoma. In remarks on the development of morbid growths, the manner of which is described as of three kinds, figures are shown, one from Kölliker, representing cell structures in the softened articular cartilage of man, and another by Redfern, showing similar formations in a cancerous exudation into the brain. In both, the mode of cell development is similar, the one having its origin in pre-existing articular cartilage-cells, and the other arising in the new cells of an exudation.

"In the cornea and epithelium, similar changes occur, as well as in the bones and mesenteric glands; yet these lesions, so closely allied in their essential nature, have, in these different textures, been called different names, and widely separated pathologically. In the non-vascular cornea and cartilage, it has been called inflammation, but in the equally non-vascular epithelium, it has been named cancer. Again, in the vascular bones and glands, it has received various names, such as osteo or medullary sarcoma, enlarged glands, etc., whilst in the brain and other localities, it has been called encephaloma, or soft cancer. It seems to me that in all these cases the lesion is the same, and that an advanced knowledge of their nature should lead us to group them together, calling some of them inflammation and others cancer; supposing the first to be innocent and the last malignant is, we contend, incorrect pathology. True pathology points out that all these lesions are equally destructive, in consequence of increased endogenous cell-growth, and practical experience has long determined the question of their all being alike difficult to control."

Before taking up diseases of the nervous system, Dr. Bennett devotes a few pages to a consideration of the influence of predominant ideas on the body. This is a very important matter, most interesting to the practising physician who would try to understand somewhat phenomena which are constantly under observation. Certain men have a power of gaining the confidence, of guiding the wills of their patients. They can effect cures and relieve pain in a manner apart from any successful diagnosis or skilful handling of drugs or other remedial agents. It is told of the coachman of a most successful practitioner that, in a conversation on the subject of his master's success, he said: "Why, the very sight of our carriage cures some people." Now, there are well informed, scientific physicians who, from the want of this power, are in small repute as practitioners, and whose reputation with their fellow-practitioners and with scientific men is widely different from that which is accorded them by the public. The success of charlatans, the cures worked by charms, amulets, and relics, the effect of the king's touch upon scrofula, the cures by Mesmer, by medical tractors, receive some explanation by a consideration of this agency of mind upon the body. Many of the phenomena of what is called animal magnetism, the power of putting others to sleep, of keeping them in a sort of trance, of directing and controlling them, must be acknowledged, and is hardly explained. Faith, belief must be acknowledged as very efficacious to work cures. And this power is not sufficiently appreciated by some scientific men; and those practitioners who possess and exercise it are denounced as charlatans. There are those who seem to think that, by extending knowledge by means of popular lectures and popular treatises on anatomy, physiology, and chemistry, the medical profession is going to put down quackery, and to increase its power over the public, and to produce a willing submission to it. But experience and observation do not justify any such expectations. Homœopathy, hydropathy, eclecticism, flourish by the side of a widely diffused popular knowledge. Nostrums and cure-alls are widely patronized by those who know enough to distrust regular physicians. Faith, submission, and obedience must be recognized as most favourable to the success of the art of healing, and no practising physician can afford to neglect any power he may have of gaining and keeping the confidence of his patients. This power may be used legitimately. It is often abused, but surely, on this account, it may not be despised. A conscience sensitive to the rights of others is needed in dispensing such powers; but because they are often possessed by those who do not resist the temptation of using them selfishly, we must not impugn their efficacy.

Our author offers a structural explanation in this connection which, from its ingenuity, may be here repeated. After speaking of what has been called hypnotism by Mr. Braid, he goes on to say:—

> "We have previously seen that the cerebral lobes contain white fibres, which run in three directions. 1st. Those which pass from below upwards and connect the hemispherical ganglion with the spinal cord; 2d. Those which pass transversely, forming the commissures, and which unite the two hemispheres; and 3d. Those which run from before backwards, uniting the anterior with the posterior lobes on each side. It has also been stated that these fibres are probably subservient to that combination of the mental faculties which characterizes thought. Now, all metaphysicians and physiologists are agreed that the mind is composed of various faculties, and that different parts of the nervous mass are necessary for their manifestation. True, it is by no means determined what or how many faculties mind should be divided into; still less is it known which parts of the brain are necessary for the manifestation of each. But let the first proposition be granted, then there is no difficulty in supposing that one or more of these may be paralyzed or suspended, while others are entire, any more than there is in knowing that sensation may be lost whilst motion remains intact, although the nerve fibres of both run side by side. I presume, then, that certain mental faculties are, as the result of exhausted attention, temporarily paralyzed or suspended, whilst others are rendered active in consequence of being stimulated by suggestive ideas; that the psychical stimuli of the former make no impressions on the cerebral conducting fibres, whilst those of the latter are increased in intensity; that the proper balance of the mind is thereby disturbed, and thus the individual, for the time being, acts and talks as if the predominant idea was a reality. The condition is analogous, so far, with ordinary somnambulism, certain forms of hypochondriasis, and monomania, but admits of infinite changes according to the nature of the idea suggested."

We should have preferred Dr. Bennett's alluding to the supernatural in this connection. We think that there is much in his remarks, as far as they go. He does not seem to us to pretend to understand and explain everything, but we should have liked a more distinct acknowledgment that "there are more things in heaven and earth than are dreamt of in *his* philosophy." We have no sympathy with the fanaticism of mesmerists and spiritualists. On the other hand, we cannot commend the attempts of some to explain away phenomena which may be unintelligible, and to set aside as false what is simply above and beyond their powers of comprehension. No truly religious man—whether he be Christian, Jew, or Mohammedan—can deny that men have been endowed with supernatural powers of healing, or that in visions of the night future events have been revealed. Our relations Godward should never be lost sight of. His infinite power and wisdom, human weakness and folly, are truths which should be well graven on the mind of the medical philosopher in his dealings with such mysteries as life and death, and we must express our fears that our profession and our science have suffered by a dim appreciation of the divine source of truth, which Van Helmont describes to us as revealed to himself only after much study and meditation. The infidelity of our day does not deny the existence of God, but refuses to acknowledge His agency—undertakes to understand and explain everything by general laws, and does not recognize a personal intervention in the affairs of men, nor the relation of each individual to a Creator and Father of infinite power and love, whose works and whose dealings must be studied with reverence and fear, and can never be fully understood by the frail and sinful creatures of a day.

Early in the section on diseases of the nervous system, we find some valuable remarks on the pathology of spinal and cerebral softenings, and on the necessity of employing the microscope to ascertain their nature. There are six kinds of softening described; the first, exudative or inflammatory softening, always containing granules and granule-cells, and thus distinguishable from hemorrhagic, mechanical, and putrefactive softenings. There is often great difficulty in connecting morbid appearances found in the brain with the symptoms recorded during life, and any suggestions on such matters are valuable.

Dr. Bennett's classification of functional nervous disorders seems to us philosophical. He makes four divisions—those in which the cerebral lobes are affected, as insanity, apoplexy, trance; those in which the cranial and vertebral portions of the spinal cord are affected, as tetanus, chorea, hysteria; those in which both cerebral lobes and spinal cord are affected, as epilepsy and catalepsy; and fourthly, neural disorders, in which the nerves are affected during their course or at their extremities. The old division of nervous centres into brain and spinal marrow is not convenient, since the brain itself, or the nervous centre contained within the skull, is looked upon as a collection of nervous ganglia, each of which has its peculiar function. We have still a good deal to learn, but Dr. Bennett's division seems to us convenient at this stage of our knowledge.

The author's power of setting forth clearly and concisely what is generally known and received may be appreciated by reading the section on the Pathology and General Treatment of Phthisis Pulmonalis, as well as that on its special treatment. The connection between the science and art of medicine is well shown, as all discoveries made by the aid of the microscope, chemical analysis, physical exploration, are compared with what experience tells of the efficaciousness of certain medicinal agents, as well as of regimen and climate.

Dr. Bennett's pathological researches do not lead him to neglect therapeutics, nor to deny the efficaciousness of remedial agents. He tells us early in his work that medicine is not an exact science, and he sets before us much that may be true, but which cannot now be proved to be so. He endeavours to bring before his readers the means of appreciating the value of evidence. He does not neglect therapeutics because its results proceed from experiment more than from reasoning. The school of Vienna, as well as that of Paris, has been reproached with a neglect of studying how to cure disease, whilst its students have been so active and so successful in pointing out how to distinguish and recognize it. Our author shows an intimate acquaintance with the researches of these inquirers, and, at the same time, gives due prominence to the practical question of therapeutic means and remedial agents which are so much more dwelt upon in the writings of his own countrymen than in the treatises of continental authors.

We are glad to find him, in pleasing contrast to a distinguished writer of our own country, not fettered or restricted by the old boundaries of solidism, humouralism, and vitalism. He points out how and where solids and fluids are diseased and the moving principle is disordered. He tries to show how intimately all are connected, and that blood, bile, and urine pass through and are modified by solid glands, which are supplied with nervous power; disturbing influences acting now on solids, now on fluids, or now on moving power, giving rise to disease and disorder. He traces disease to these different elements, without pretending to such a thorough acquaintance with their connections as to enable him to distinguish the precise agency of each. He does not profess to have found a point of view from which all the phenomena of disease can be seen, and their connections and relations traced out and understood.

Dr. Bennett's book is practical, and certainly very suggestive. We can scarcely open a page without coming upon something of interest, and which might well be the subject of remark. He has been long, however, before the public, and we have now an arrangement with more detail, and a collection of much that has been said before. The title of his book is appropriate. We find in it clinical lectures on medicine, and not a complete treatise. Cases are well brought in to sustain his conclusions, and to show how he has been led to form them. There are opinions from which we should dissent, and a sufficient appreciation by the author himself of the value of his researches is plain enough everywhere. Oblivion of self is not as frequently met with amongst men of the intellectual powers and activity manifested by Dr. Bennett as could be desired. Self love and self-seeking are often impediments in the way of truth. Dr. Bennett's reputation, however, is well established. He has done a great deal to assist and instruct the practising physician, and we are sure that all such who will take the time to make themselves acquainted with this second edition of his clinical lectures will not regret their labour. G. C. S.

ART. XVI.—*Observations on Naval Hygiene and Scurvy, more particularly as the latter appeared during a Polar Voyage.* By ALEX. ARMSTRONG, M. D. R. N., etc. etc. Author of A Personal Narrative of the Discovery of the Northwest Passage. 8vo. pp. 117. John Churchill: London, 1858.

IT is not pretended that this is a systematic treatise on naval hygiene or on scurvy. The observations on scurvy are chiefly derived from the author's experience on board of H. M. S. Investigator in the arctic regions. Sir Gilbert Blane's gold medal was awarded to him for his journal of practice on board of that ship.

At the present day, scurvy is rarely prevalent in the navy, and, in the opinion of Dr. Armstrong, when it "does unhappily break out, its appearance can always be traced to the neglect of proper preventive measures," the chief of which is the daily use of lemon-juice, an article employed for the prevention and cure of scurvy as far back as 1564; but it was not until 1795 that the British admiralty were induced to direct that lemon-juice should be issued to the British navy for this purpose.

> "From this period a new era dawned upon our navy. The health of our seamen became wonderfully improved, and the efficiency of our fleets was greatly increased, when it was found that ships could keep the sea for any length of time, although deprived of that kind of diet [fresh vegetables] the want of which had been hitherto attended with such disastrous results. This happy state of things, which has contributed so much to the efficiency of our navy, and to the greatness and prosperity of our country, became established by the introduction of lemon-juice and its judicious employment as a means for the prevention and cure of a disease that had previously been the dread of sailors and the scourge of the sea."

Too much is here attributed to a remedy which is generally acknowledged to be efficient. The healthy condition of the British navy does not depend, in any considerable degree, upon the daily use of lemon-juice by all seamen who have been more than fourteen days at sea, eating the salt ration. The writer believes that the health of the navy of the present day had its origin in those measures which were consequent upon the mutiny at Spithead and the Nore, in 1797, when, it will be remembered, the sailors demanded and obtained an addition of fresh vegetables and an increase in the weight of provisions allowed, as well as an augmentation of pay. Previous to that event, the British naval ration did not supply sufficient nutriment to maintain the body of a labouring man in health, and, though it has been increased at least one-third, it is not at present redundant. There was a time when scurvy, fever, dysentery, and ulcer were supposed to be inherent to sea life; but since the stand at Spithead compelled the government to furnish food in larger quantity, of better quality, and in greater variety, the bodily and mental conditions of seamen have improved, and we have been induced to believe that those diseases are no more incident to residence in a ship than in a house.

Nerve-power, vital force are results of assimilation of food and nutrition of the organism. Perfect and exact nutrition of all the organs is the condition of vigorous health. When, through the imperfection of the nutritive material brought to the organs for assimilation, or through the faulty action of the organs themselves, the function of nutrition becomes embarrassed, health is disturbed, or the animal power is abated. Believing these assertions to be true, there is no hesitation in attributing the bad health and fatal disorders, prevalent in the British navy until the close of last century, to the meagre quantity, and bad quality of the food given to sailors prior to the year 1797; and the high health now enjoyed is ascribed to other causes than the use of lemon-juice.

To indicate the improvement in the health of the English navy, we refer to the *Statistical Reports of the Health of the Navy*, by John Wilson, M. D. R. N. (Printed by order of the House of Commons, 1841.)

In 1779, the proportion dying was one in eight of the employed.

In 1811, the proportion dying was one in thirty-two of the employed; and from 1830 to 1836 inclusive, the average number dying annually was one in seventy-two of the employed.

The principal causes of this improved condition were, first and greatest, the increase made in the allowance of food demanded by the mutineers at Spithead, in 1797, and, subsequently, a progressive improvement in the quality of provisions. Dr. Wilson says:—

> "It gave sufficient instead of inadequate supplies of nutriment, infused so much vigour into the body as enabled it to resist many influences which, in a state of debility, would have proved causes of disease and death; and at once, and almost entirely, banished from the fleet the asthenic affections previously infesting it—the scurvy, putrid fever, ulcer, and dysentery—which crippled, sometimes nearly destroyed, its energies, and contributed largely to its bad character."

Second. Sufficient supplies of palatable and, as far as perfect preservation is concerned, wholesome water, from the general use of iron tanks, since the year 1815. Prior to this date, wooden casks were employed, and, from their inferior stowing qualities, afforded a smaller supply, which "became speedily so offensive, and even disgusting from partial decomposition, that it was drunk only sparingly when feelings of thirst could no longer be borne."

Third. The substitution, in the year 1825, of tea or coffee for one-half of the quantity of spirits, usually Jamaica rum, the allowance of which had been one-half pint daily.

Fourth. Attention to the moral, intellectual, and religious training of seamen; improvement in apparel and personal cleanliness; improved ventilation of ships; the use of portable drying-stoves between the decks in wet weather.

"It will be generally admitted," says Dr. Wilson, "that some portion, however small, of the health now enjoyed in the navy, may be fairly ascribed to the professional attainments, zeal, and humanity of its medical officers; so much it may be permitted even to one of themselves to assume. Should there, however, be any unwillingness to admit that conclusion, there will be none as to the importance of the means put into the hands of those officers by comparatively recent regulations, including the nutritious and regulated diet provided for the sick and convalescent; the improved construction of sick-berths, dispensaries, and medicine-chests; the enlarged list of medicines, and the supply of superior articles in medical necessaries."

Although scurvy gradually disappeared from the navy of Great Britain after the close of the past century, it has always occurred to a greater or less extent in polar expeditions, and, according to our author, with a single exception, always made its appearance during the first winter in the ice.

All the public ships of Great Britain employed in polar discoveries since the time of Parry have been very nearly alike in tonnage, internal arrangements, general equipment, and victualling, as well as in the description of men composing their crews. For this reason the author inquires:—

"To what circumstance was it owing that one ship [the Investigator], in no respect better equipped or victualled than the others, but in some respects placed under comparatively disadvantageous circumstances, enjoyed an immunity from the disease for a longer period than has been hitherto known, and was visited with less comparative mortality than has ever occurred on board any ship wintering in the Polar Sea. There is no instance on record of any ship having spent one winter in the ice, with the exception before mentioned, without losing one or more men by death, the mortality for the most part resulting from, or associated with, the existence of scorbutic disease."

Dr. Armstrong appears to have overlooked the history of the expedition in search of Sir John Franklin, in the years 1850–51, under the command of Lieut. Edwin J. De Haven, U. S. Navy. The Advance and the Rescue passed a year in the Arctic regions; their crews did not daily use lemon-juice as a prophylactic, but only as a remedy after the appearance of the disease. Lieutenant De Haven says, in his official report, which is appended to the personal narrative:—

"As the season advanced, the cases of scurvy became more numerous, yet they were all kept under control by the unwearied attention and skilful treatment of the medical officers. My thanks are due to them, especially to Passed Assistant Surgeon Kane, the senior medical officer of the expedition. I often had occasion to consult him concerning the hygiene of the crew; and it is in a great measure owing to the advice which he gave, and the expedients he recommended, that the expedition was enabled to return without the loss of one man."[1]

The author believes that the exemption of the crew of the Investigator from scurvy for an unprecedentedly long time was chiefly due to the daily use of lemon-juice. This ship was six months continuously at sea, without procuring fresh vegetable supplies, and was two winters subsequently in the ice before scurvy made its appearance.

"The assertion, therefore," he says, "cannot be controverted that this disease can always be prevented, and that it should never occur, when we possess the proper preventive means, and know how to use them."

The lemon-juice supplied to the Investigator was of the best quality, and consisted of two kinds, one of which was prepared by adding a tenth part of brandy, and the other was the acid simply boiled, and containing no spirit. The juice was kept in bottles, each containing sixty-four ounces, with a stratum of olive oil, about a half an inch in thickness, on its surface, and the bottles were carefully corked and sealed.

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[1] The U. S. Grinnell Expedition in search of Sir John Franklin. A Personal Narrative. By Elisha Kent Kane, M. D., U. S. N. Harper & Brothers, New York, 1853. (Page 501.)

In order to test the relative merits of the two kinds of acid, each half of the crew partook only of one of the two preparations, which were mixed with sugar in separate tubs, from which each man daily drank his allowance of one ounce in the presence of an officer. In this manner, evidence was afforded that every man in the ship was fortified with a regular daily quantity of a powerful antiscorbutic.

"To this circumstance, therefore," says Dr. Armstrong, "I unhesitatingly attribute not only the immunity we enjoyed from scurvy for a longer time than has ever been known before in the Polar Sea, but also our good fortune in maintaining an unprecedentedly high standard of health among our crew during the same period."

In the opinion of our author, the antiscorbutic properties of lemon-juice are not deteriorated by keeping, provided that it be properly prepared and packed. That which was on board of the Investigator was subject to every possible vicissitude of temperature, from the highest degree of equatorial heat to the lowest of polar cold, being under the influence of the latter for upwards of three years; and when examined at the end of that time, its power of neutralizing alkalies was not in the slightest degree impaired.

The lemon-juice prepared by adding a tenth part of brandy was preferred, because it remained clear and free from deposit, while that which was simply boiled deposited a portion of its mucilaginous constituents in the form of a dense, heavy, cloudy-looking mass at the bottom of the bottle, apparently indicating that some change had taken place, but its therapeutic efficacy and its power to neutralize alkalies were not affected.

Had these two preparations been subject to the temperature of the tropics and the incessant motion of the ship instead of reposing in arctic cold during three years, where chemical actions and reactions must be impeded, it is possible that the properties of the boiled lemon-juice would have undergone important changes, and become a very feeble antiscorbutic remedy. It is probable that the deposit observed in it was due to the high atmospheric temperatures to which it had been exposed for several months before reaching the polar region. The writer of this notice has more than once met with lemon-juice, in the tropics, which had become unfit for use, in his opinion, after being on board two or three months, because it had fermented and evolved fetid gas.

Dr. Armstrong states that he has had ample opportunity to judge of the comparative antiscorbutic powers of lemon-juice and of pure citric acid, and is of opinion that the latter ranks next after lemon-juice. He has had no experience in the use of nitrate of potash, but considers its exhibition as a preventive or curative agent in scurvy to be in conflict with all sound principles of medicine.

Scurvy sometimes prevails among the troops at frontier posts in the United States. Assistant Surgeon Anderson, U. S. Army, reports very favourably of the nitrate of potash in the treatment of the disease, as it affected the command at Fort Terret, in Texas; and Assistant Surgeon Murray states that, at Fort Miller, California, "several cases of scorbutic diarrhœa have been treated with the happiest results with the supertartrate of potassa in small doses long continued."

In this connection, it may not be superfluous to notice here, that in 1851, Assistant Surgeon Glover Perin, U. S. Army, reported that owing to a scarcity of lemon-juice, he had sought and found a substitute for it in the treatment of scurvy, prevalent at Fort McIntosh, Texas, in the juice of the maguey, or Agave Americana, which was exhibited in doses of two ounces three times daily, with entire satisfaction. In 1852, Assistant Surgeon Crawford treated cases of scurvy at Fort Croghan, Texas, with the common prickly pear (*Cactus opuntia*). The result was highly satisfactory. It was prepared "by removing the thin epidermis from the thick, succulent leaves, and, after cutting them into slices, macerating them in water. This furnished a thick solution, which was given as a drink to the patients."[1]

It is conjectured that the prevalence of scurvy among the crews of ships engaged in arctic explorations is due to deficiency of food furnished by the British naval ration, which, though sufficient under ordinary circumstances, is inadequate to meet the demands of the system under the sedative influence of very low temperatures, long continued. On board of the Investigator each man was allowed daily about six ounces of preserved fresh meat, or about the same weight of salt beef or pork, and two and a half ounces of vegetables and a gill of rum, which was reduced in the second year to two-thirds of a gill, and in the third year, this was given only on alternate days. The allowance of bread for the first year was one pound, and for the second and third years, two-thirds of a pound, daily. Tea, chocolate and sugar, peas, pickles and suet were also included in the ration. One ounce of lemon-juice was administered daily during the first and second years, but only a half ounce during the third.

> "Towards the beginning of the third year, the salt beef and pork were very generally eaten in the raw state, or only partially cooked, as the meat was found to allay hunger better in the raw state; and this plan was adopted for the additional reason that the meat shrunk very considerably in boiling.
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> "Having now fully stated the nature and quality of our diet, I may here remark that I consider the full allowance inadequate to maintain health in a polar climate, from the necessity there exists for a larger supply of carbonized food in such a region. If the supply of food is not equal to the demand, and is deficient in the proportion of carbon necessary for the wants of the system, that supply must be furnished from some other source, otherwise the vital process of respiration cannot be fully maintained. The tissues of the body, therefore, which are rich in carbon, must furnish that element, and hence the body gradually wastes, and debility and disease ultimately ensue. Men are less capable of resisting cold in the second year in a polar climate than they are in the first, and so on for every subsequent year of their sojourn. Their state of body is either at or above par, on first entering the ice, from the recent effects of wholesome diet and fresh vegetable food, which enable them to generate sufficient heat to meet the exigencies of the climate; and what the allowance of food fails to supply, is taken from other sources within the system. Now, in the second year these resources are obviously not so abundant, and a larger instead of a smaller quantity of food is necessary to generate heat, and to make up the deficiency. If this additional supply be not forthcoming, the results which I have before mentioned must necessarily take place."

To us it seems vain to suppose that lemon-juice can compensate for habitual deficiency of food, which, it is very generally agreed, is the cause of that condition of the liquids and solids of the organism which is denominated scurvy. Lemon-juice was very regularly administered to the crew of the Investigator, but failed to prevent a visitation of the malady; and no facts are related by Dr. Armstrong which tend to show conclusively that the disease would have appeared earlier and proved more fatal without the lemon-juice. This disease is very rare, indeed almost unknown on board of the public ships of the United States; but in them lemon-juice forms no part of the ration or of the surgeon's stores. The allowance of citric acid is two pounds a year to frigates, whose crews number about four hundred. In a word, experience in the navy of the United States shows that the daily exhibition of lemon-juice or of citric acid is not necessary to protect men from scurvy while they are well fed, well clothed, well lodged, and in most respects, though not in all, treated with due consideration, as they are in our naval service. And even as curative means, all the articles named are to be regarded as imperfect substitutes for a full diet of fresh, ripe fruits and vegetables, with a due proportion of sound fresh beef or mutton, properly cooked. American whalers consider potatoes, eaten raw in moderate quantity, to be a prophylactic, as well as remedy for scurvy, unsurpassed by lemon-juice or any other article.

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[1] See Statistical Report of the Sickness and Mortality in the Army of the United States, compiled from the Records of the Surgeon General's office, embracing a period of sixteen years, from January, 1839, to January, 1855. Prepared under the direction of Brevet Brigadier General Thomas Lawson, Surgeon General U. S. Army. By Richard H. Coolidge, M. D., Assistant Surgeon U. S. Army. Washington, 1856.

Dr. Armstrong judiciously urges that the first measure to be taken, in order to secure a healthy ship's company, is a careful examination of the men prior to enlistment. He says—

> "I have frequently seen, during my course of service in the navy, when acting on invaliding boards, men brought forward for survey a few months after their entry, labouring under diseases which were never contracted in the service, and which the exercise of greater care and attention might possibly have detected."

When men are disposed, as recruits generally are, to conceal the defects of their bodily condition, even very careful medical scrutiny may fail to detect them. And on the other hand, some malingerers have so adroitly assumed the counterfeit presentment of disease, that more than ordinary observation has been necessarily exercised in exposing their deceptions. In both these cases the difficulties of diagnosis between health and disease are sometimes so great that even the most skilful and careful medical officer may be deceived, without justly incurring censure for heedlessness or ignorance. Dr. Armstrong seems to appreciate fairly the importance of those duties of the military surgeon which embrace the inspection of recruits, and the examination of the sick or hurt who claim pension or discharge, and his observations on these points, though very general in character, are worthy of the attention of members of the profession employed in military service, either ashore or afloat.

Dr. Armstrong urges that among the most essential conditions for maintaining health in a ship's company is to keep the decks dry, freely ventilated, and the bilges free from stagnant water, which may soon become a source of vitiation of the atmosphere. He says—

> "There can be no more fertile source of disease amongst seamen, or indeed other persons, than the constant inhalation of a moist atmosphere, whether sleeping or waking; but particularly is this influence injurious, when the moisture exists between a ship's decks, where it may be at the same time more or less impure, and hot or cold, according to circumstances.
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> "I have already stated the influence which I believe it exercises in favouring the production of scurvy. The maintenance of a dry atmosphere must therefore be considered a more or less powerful preventive of the disease. But where the evil influence of a moist atmosphere is exercised in a marked degree, is in the vast number of rheumatic, catarrhal, bronchial, pulmonic, intestinal and other diseases which it never fails to engender; and these are often of a

> very severe and obstinate character, in many cases ultimately entailing the necessity of invaliding the subjects of them. This evil has its origin, for the most part, in a practice formerly universal in the navy (and which, I regret to say, still exists, but to a less extent), of daily washing and holystoning the decks, and all parts of the ship that could be reached. They consequently become saturated with wet, and the slow process of evaporation does not properly dry them at the end of twenty-four hours, when they become subject to the same process again. and thus the air between decks is kept constantly moist. It was therefore in my experience, no unfrequent circumstance to find a sick list almost entirely made up of diseases resulting from this cause. The representations of the medical officers, who were aware of the injurious influence of the practice, often failed to arrest it; and the health of a ship's company was and is but too frequently sacrificed to the caprice or self will of commanding officers who persist in a practice, which to minds the least intelligent must appear to be be fraught with much evil. Yet it is followed to a great and unnecessary extent in the navy, merely because it is the custom of the service; and I have generally observed that some officers are most wedded to the practice in a degree proportionate to their unfitness for other and more important duties; and they glory in their ability, at least, to practise the cold water cure on the ship's decks, in spite of all representation and remonstrance, and with a total disregard of consequences."

The navies of Great Britain and the United States are almost identical in many of the practices observed; and, when we remember that the organization of the first was the type from which the latter was planned, it is not very surprising that the copy should closely resemble the model (which is considered by a majority of American seamen to be the best in the world), except only in size and cost. Few medical officers of the navy of the United States can read the above paragraphs by Dr. Armstrong without acknowledging that they apply with much emphasis and truth to our own service. On board of some of our ships, cruising in moist, tropical regions, the decks, from being drenched daily with sea-water, are never absolutely dry; yet no medical representation is sufficient to convince their commanders that the rheumatisms, catarrhs, &c., afflicting the crew, are caused and kept up, in a very great degree, by the fact that the men sit upon the wet decks while they eat, and, while between the decks, sleeping or waking, never respire any other than an excessively moist atmosphere. It is rare to find, on board of ships wherein the wet method of polishing the decks is followed, the wet bulb of a thermometer standing at more than 2° Fahr. below that of a dry one, so nearly is the atmosphere kept to saturation with moisture by local causes.

Dr. John Wilson, R. N. (in the Parliamentary document above referred to), earnestly called attention to this subject in 1840; yet, according to the testimony of Dr. Armstrong, the practice has not been very much abated. Dr. Wilson, speaking of the different modes of cleaning ships, said :—

> "Extreme cleanness, even to spotless whiteness of the decks, is not necessary to health, and, when obtained at the expense of frequent washing, may be, and no doubt often is, injurious to it. Hence, dry stoning, at any rate dry cleaning, though it may not so much beautify the decks, should be preferred to cleaning by any means in which water is employed."

The writer learns from unpublished data that, on board of a frigate in which the decks were kept constantly wet or damp, from daily washing, during the first nine months of the cruise, the daily average number of sick exceeded seven (7.67) per cent. of the crew. The decks were washed two or three times a week during the second year, and the daily average number of sick was reduced to six (6.63) per cent. of the crew; and in the third year, when the decks were washed only once in a week or two, it fell to four

(4.49) per cent. Except changing from a wet to a comparatively dry system of cleaning the decks, there does not appear to have been any circumstances to which this striking difference in the sanitary condition—of more than three (3.18) per cent.—could be fairly ascribed.

We have somewhat extended our notice of Dr. Armstrong's thin volume (the subjects of which are of practical interest to comparatively few members of the profession), because we desire to indicate to the military readers of this journal the nature and scope of the author's statements, which are not likely to be reprinted in this country. Naval hygiene and scurvy are not separately treated; but observations on both are incidentally mingled and repeated to such an extent as to expose the author to being suspected, in some degree, of want of method. Nevertheless, we commend the work to that class of readers for whom it was especially written. W. S. W. R.

Art. XVII.—*The Ganglionic Nervous System; its Structure, Functions, and Diseases.* By James George Davey, M. D., M. R. C. S. Lond., &c. &c. London: John Churchill, 1858. 8vo. pp. 309.

The physiological views expounded in this work have been, to some extent, already made known to the profession; especially in communications by Dr. Davey in the *London Lancet*, in 1850 and 1853. Their tendency is to exalt very much the importance of the sympathetic or ganglionic (named by Mr. Solly the *cyclo-ganglionic*) system, above what has been conceded to it by most modern physiologists; and to distance even, in this respect, the conception of the "organic life" of Bichat.

The anatomical chapter is simply preliminary and general. It emphasizes, however, the textural difference between the cerebro-spinal and the ganglionic structures, remarking that the admixture of the gray (gelatinous) and white (tubular or fibrous) substances in the latter gives to its parts or ganglia a certain independence of power and action, which the distinctness of the two in the cerebro-spinal renders impossible.

In comparative anatomy, Dr. Davey's opinions are expressed as follows:—

"*a.* The ganglionic nervous system first exists in a molecular form, and is made up of globules dispersed throughout the homogeneous texture of the animal, as in the acrita, the lower entozoa, &c.; as such it has also been presumed to exist in the early human embryo.

"*b.* These nervous globules, arranging themselves in a longitudinal series, form filaments, and these 'filaments' at length form a central point, a ganglion (*solar ganglion*, Anderson).

"*c.* Ascending the scale of animal creation, and arriving at the *mollusca*, nervous matter is found secreted about and around the œsophagus, and on the dorsal aspect of the animal (supra-œsophageal ganglion); this nervous matter becomes, in the higher animals and in man, the tubercula quadrigemina or medulla oblongata.

"*d.* Still ascending, the cyclo-ganglionic nervous system becomes more complicated, whilst the several tissues and structures subordinate to the same, including the cerebro-spinal system, are proportionately amplified; the increased development of the former, and the general augmentation and addition of parts in the latter, being in the relation to each other of *cause and effect.*" (P. 65.)

Dr. Davey considers that the absence of "distinctness" in the nervous tissue in the lowest forms of animal life does not disprove its existence, which he believes, on the evidence of *vitality* and *irritability*, to exist in a "molecular" or diffused state even in *plants*. Although not without some ambiguity in the reasoning, he suggests the identity of *all* primal organic cells with "nervous globules," in which alone, according to his view, vitality can reside. In the physiological chapter (p. 116) the ganglia of the sympathetic are designated as "the germ of all animal life, whether cerebral, spinal, or organic." If this expression be understood in the sense of *basis* or substratum, it will certainly be less unphilosophical than that used in the last of the propositions above quoted, in which the relationship between the circle of ganglia and the rest of the nervous system is described as that of *causation*.

Later in the volume, while criticizing the views of Dr. M. Hall, the following conclusions are enunciated (p. 188):—

> "1. That the more complicated anatomy of the spinal cord, suggested by Dr. M. Hall, and sought for by Mr. Grainger, has not yet been realized.
>
> "2. That the mere sensory and motor nerves or roots are themselves sufficient to the integrity of all those phenomena called excito-motory, which emanate from the spinal cord; or, in other words, that there is no necessity for any distinct division of the nervous (spinal) system for the production of the excito-motory phenomena.
>
> "3. That the exercise of the functions of the spinal cord is due to the peculiar influence of the ganglionic nervous system exerted on its organism.
>
> "4. That both the external and internal excito-motory phenomena are alike dependent on the vital stimulus imparted by the great sympathetic nerve; and, in the former instance, through the instrumentality or medium of the medulla spinalis, &c. &c."

The evidence and illustration of these propositions, which it would require many pages to analyze, concern especially the following subjects: the observed effects of a blow, or of pressure, upon the solar ganglion, or upon other main ganglia of the sympathetic; the history of acephalous and amyencephalous monstrosities, maintained in vitality by the ganglionic system alone; examples of cerebro-spinal paralysis, in which all organic acts, the repair of injuries, &c., have proceeded as usual; the pathology of "general paralysis of the insane," which extends to the ganglionic centres, destroying excito-motor power; experiments by Brodie, Sharpey, and Schrœden, on the effects of the removal of the brain and spinal cord; those of Reid and Magendie, proving digestion to be possible without the influence of the pneumogastric nerve; the phenomena of sleep, of animal heat, and of instinct.

We find occasional matter for criticism in the manner in which these topics are handled and made subservient to our author's purpose; as, for example, in the too easy assumption that the *spinal* system necessarily partakes of inaction, with the cerebrum, during sleep; and in the assertion, that "animal heat is no doubt essentially a vital process, and not a chemical one." If it be not *both*, we must consider it at least premature at present to *exclude* chemical action from the explanation of its production.

Our idea of the soundness of Dr. Davey's physio-philosophy is somewhat affected by his repeated expression of confidence in the doctrines of "phrenology," and of admiration for what we had learned to consider the already exploded crudities, however ingenious, of the author of the *Vestiges of Creation* upon the subject of the origin of life. The experiments of Crosse and Weekes are, by our author, still held to be "conclusive" that life does not proceed only from life.

It is probable that he may, ere long, claim the dignity of being alone in that opinion.

Although full proof does not appear to us to have been given, in the book under notice, of the *totality* of the doctrines advanced, as to the supremacy of the ganglionic portion of the nervous system, yet there is much in its statements and reasonings deserving of profound consideration, as bearing not only upon the explanation of important physiological problems, but also upon the theory of disease and the rationale of its treatment.

Dr. Davey asserts, incidentally, that too much credit has been assumed by, and conceded to, Dr. Marshall Hall, for originality as well as for exact correctness in his views of the functions of the spinal system. The *completion* (if it be yet completed) only of the physiology of the excito-motor system belongs to him; the essential ideas of it were, undoubtedly, developed by Unzer, Walker, Bell, and others, before him; as have been those of most consequence concerning the sympathetic system, by Prochaska, Clark, Grainger, Brachet, Fletcher, and others, before Dr. Davey; and, almost contemporaneously, also, their completion has been promoted by Dr. Campbell and by M. Bernard. The gradual progress of science rarely admits of the monopoly, even of one great discovery, by a single individual; nor need the genuine lover of science desire that it should be otherwise.

The chapter on the pathology of the ganglionic system is a very interesting one. The general distribution of this portion of the nervous apparatus is referred to, as proving its participation, directly or indirectly, "in every variety of abnormal action which we may witness." But especially is the pathology of fever, and that of cholera, illuminated by the consideration of the relations of the sympathetic system to the functions affected in those disorders. Upon this subject, Dr. Davey wrote as early as 1835; although Favell, Müller, and others, have also propounded similar views in regard to the nature both of fever and of cholera. From experiments upon animals, as well as from observations upon men, Dr. Davey asserts that the fatal depression of cholera, consisting in the complete annihilation of the action of all the vital organs, may be at any time simulated by pressing the solar ganglion upon the forepart of the bodies of the vertebræ over which it lies. The occasional termination in death of apparently slight attacks of ordinary disease may be accounted for, also, by a predisposition to depression and exhaustion, seated in the ganglionic centres. Diseases involving the brain, moreover, as the *apoplexia levis* of Forestus and Portal, and epilepsy, especially the *epilepsia syncopalis* of M. Hall, may be *primarily* seated in the ganglionic system, affecting secondarily, only, the cerebro-spinal apparatus. Nor is this less probably true of some more slowly progressing organic and functional diseases, as the *degeneration* of various organs, fatty or otherwise; local or partial paralysis or atrophy; hypochondriasis and irritative dyspepsia; diabetes, &c. The latter disorder Dr. Davey considers to be an affection of the *renal ganglia* chiefly. Even the pathology of dysentery is believed by him to be capable of improved interpretation under the same views; the seat of the primal disorder being inferred to be the organic (intestinal) nerves, through whose perverted influence on secretion arises the irritating character of the fluids discharged into the bowels. A very similar opinion, extending also to the explanation of diarrhœa and cholera morbus, &c., is quoted from Dr. Copland's *Medical Dictionary;* in which the recognition of the "excito-secretory" principle in the generation of disease is approached very closely.

Various spasmodic and nervous affections of hitherto indeterminate pathology our author would locate, not without plausible reasons, in the centres of organic life; as *neuralgia*, *angina pectoris*, *asthma*, *pertussis*, and *laryngismus stridulus*.

Not following him, at present, in the consideration of these, we must say of the last chapter, upon the principles of *treatment* of disease, that it does not appear to us equal in value to those which have preceded it. From the opinion that the pathology of fever and cholera consists essentially in derangement of the ganglionic nervous system, and, hence, that the primary object in their treatment should be the restoration of that system to its normal state, he passes at once to the advice, that *purgatives* should be made the basis of that treatment. Why so? No explanation is given of the *rationale* of the influence of purgatives upon the "condition of the ganglionic nervous apparatus;" and, without such an explanation, their use bears no nearer relation to the neuropathic than to any other theory of therapeutics. Nor does experience bear out, conclusively, the superiority of this plan of medication. In cholera, the failure of Dr. George Johnson to establish the potency of the "castor oil" treatment is ascribed, by Dr. Davey, to his employing *only* the oleaginous purgative, instead of using this merely as an adjuvant, to *turpentine, croton oil,* and *colocynth,* and aiding these also by stimulation with ammonia and brandy, &c. This last was the plan employed by Dr. Davey himself, "with confidence," during a five years' practice at Ceylon.

Notwithstanding, however, the disagreement of these therapeutical views with those adopted by the majority of practitioners, and the absence of explanation of their real connection with the author's own pathological opinions, the facts and reasonings which constitute the body of Dr. Davey's book render it well worthy of study by the physiologist and physician. Its most valuable matter is suggestive rather than demonstrative. It will require yet a long period to complete the exploration of the difficult region of the nervous system, and of its relations to disease; and still longer must we wait for the application of the matured results of such investigations to rational practice.

H. H.

BIBLIOGRAPHICAL NOTICES.

ART. XVIII.—*Transactions of American Medical Societies.*

1. *Transactions of the Medical Society of the State of New York, at its Annual Session of* 1858. 8vo. pp. 655. Albany, 1858.
2. *Proceedings of the Sixty-Sixth Annual Convention of the Connecticut Medical Society, May,* 1858. 8vo. pp. 120. Hartford, 1858.
3. *Transactions of the Twelfth Annual Meeting of the Ohio State Medical Society, held in the City of Sandusky, June,* 1857. 8vo. pp. 226. Sandusky, 1857.
4. *The Transactions of the Belmont Medical Society,* for 1856–57. 12mo. pp. 70. Bridgeport, Ohio, 1858.

1. THE *Transactions* of the Medical Society of the State of New York, at its Session of 1858, embrace a series of able, interesting, and valuable papers.

The annual address of the president, Dr. AUGUSTUS WILLARD, was on the subject of air, exercise, and sunlight. The absolute necessity of a constant and ample supply of free, pure air, of a proper temperature and moisture, of a regular and adequate amount of active, out-door, muscular exercise, and of daily and free exposure to solar light, as three of the most important of the hygienic agents, upon whose agency intimately depend the enjoyment of health, the extension of existence, the increase of animal and mental comfort, and the certain prophylaxis of disease, is ably enforced by Dr. W. He especially dwells on the importance of sunlight to health as the subject the least understood and appreciated. The particular effects and the peculiar influence of the light of the sun upon the animal system are not, it is very certain, sufficiently recognized by the community generally, notwithstanding there is good reason for believing that, in the preservation of health, and in the prevention of disease, it exerts an amount of influence which can scarcely be estimated.

"A particular and most prominent effect," Dr. W. remarks, "of the long polar night, upon the human economy is the peculiar paleness of the skin. It is undoubtedly a true anæmia, and must, without hesitation, be attributed to the absence of sunlight. We need not, however, travel to the arctic circle to find sufficient evidence that an anæmic state of the system may be, and is produced by the absence of sunlight—that diffused daylight is not sufficient to keep up the health and strength of the system—that, in short, the direct rays of the sun are indispensable to a perfectly healthy condition of the body. Persons who have been imprisoned in dungeons where the light of the sun never enters, assume a decidedly anæmic appearance—the inmates of our State prisons, who are mostly excluded from the direct rays of the sun, have a pale and exsanguine look, and become, in many instances, feeble and sickly, and not unfrequently die prematurely.

"It is undoubtedly true that a majority of the cases of anæmia which come under the observation of the physician, occur among those who are deprived, by some means, of the necessary influence of direct sunlight. It is a consequence of civilization, in this country at least, to condemn a certain class of citizens to an inactive in-door life. Fashion deprives 'the better part of creation' of sufficient exercise in the open air. True, they tell us that they take a daily promenade or a ride, but in the one case they are closely veiled, and in the other, the exercise is of a passive kind and in a covered carriage, and in both cases the direct rays of the sun are never suffered to touch upon the damask cheek, or play with the taper fingers, lest they should darken the roses upon the one, or sully the lilies upon the other. Perhaps it may be that a sufficient amount of exercise is taken in the twenty-four hours to answer the demands of the system were it properly employed. But a small part of it, however, is taken by sunlight, and that which is taken by artificial light can never become a substitute. The exercise may even be active, but the chemical influence of artificial light, if any it has, can never, by any process, be made to supply the place of the sun's chemical rays, and the chemical constitution of the body cannot, of course, under such circumstances, be perfect. The system must necessarily languish and falter, become pale and bloodless, and ultimately fall into a fitting condition for the advent of those thousand nameless ills which the spirit of modern civilization has conjured into existence. Extremes meet. The ills which the tyrant fashion has meted out to her followers with unsparing hand, are sown broadcast among those who are condemned, by poverty, or chance, or crime, to spend their days in confinement, in workshops, in poorhouses, in dark and sunless localities, situations where the 'perfumed bath of sunshine' can never be enjoyed. The same paleness and bloodlessness, the same tendencies to nameless disease, are to be found in their comfortless homes, as are observed among the pampered inmates of the stately and curtained palaces of the 'upper ten.'"

To the address of Dr. W., succeed biographical sketches of Drs. Sumner Ely, Thomas Spencer, and Henry Reynolds, deceased members of the New York State Medical Society.

Dr. Spencer spent the few closing years of his life in this city, where he died on the 30th of May, 1857, in the 59th year of his age. His general appearance impressed us with the belief that he was many years older.

The first of the scientific papers is one on anæsthesia, by PETER VAN BUREN, M. D. It is, in strict parlance, a somewhat elaborate account of the chemical history and anæsthetic properties of chloroform, with an inquiry into the influence its employment exerts upon the mortality of surgical operations and obstetric practice—its value as a remedy in various spasmodic and nervous affections—the extent to which anæsthesia may be safely carried, and the indications by which to determine when that limit has been reached, and the means to be employed when it is passed, and anæsthesia has been carried too far.

The paper is one of deep interest. Dr. Van Buren is a strong advocate for the induction of anæsthesia in surgical operations, and to assuage the pain of parturition; and he is decidedly in favour of chloroform as the anæsthetic agent. We cannot, he thinks, err in devoting our attention closely and patiently to the study of all that appertains to the properties and uses of this agent, which has, he remarks, become the principal and almost sole reliance for the production of anæsthesia when all other agents fail. It possesses, he affirms, powers, which, if properly applied, exert a salutary and controlling influence over several phases of disordered nervous action, without the necessity of its being carried to the extent of producing complete anæsthesia.

There is nothing particularly new in this paper of Dr. Van Buren. It presents, in a condensed and intelligible form, the general facts and arguments that have been adduced in favour of a resort to anæsthesia, in cases in which it is desirable to assuage pain or quiet disordered nervous and muscular action, with the precautions necessary in the use of the most powerful, prompt, and certain of the anæsthetic agents, chloroform, to insure its successful operation with entire safety to the patient.

The next paper is on "the use of amylene as an anæsthetic," by Dr. JOHN G. ORTON. The result of this gentleman's observations from personal researches in regard to this article as an anæsthetic, are as follows:—

"1. It is more rapid in the production of anæsthesia than either chloroform or ether.

"2. A much smaller quantity is required to effect abolition of sensation than of either chloroform or ether.

"3. Long-continued insensibility may be maintained without a loss of consciousness.

"4. The recovery from the state of anæsthesia is almost instantaneous.

"5. Profound coma has never supervened upon its administration.

"6. Neither vomiting nor coughing has occurred during or following its inhalation.

"7. The pulse and respiration are slightly increased in frequency.

"8. I have never witnessed any struggling or rigidity in any of my patients, while bringing them under the influence of the anæsthetic, as is frequently the case with chloroform and ether.

"9. Amylene should always be administered with the aid of an inhaler, which should be so arranged as to allow a large admixture of atmospheric air.

"10. Ordinarily, a patient will require about one fluidrachm of amylene per minute, to effect and maintain anæsthesia of the third degree of narcotism.

"11. The same care should be exercised in the selection of proper subjects for its administration, as in chloroform or ether, namely, absence of organic disease of the brain, lungs, or heart.

"12. With due precaution in its employment, which in fact should characterize the use of any of the anæsthetic agents, I regard amylene equally as safe as chloroform."

The failure which has heretofore attended the use of amylene in this country, Dr. Orton declares to have arisen solely from the fact that the article employed was a spurious one, and not amylene; one entirely destitute of anæsthetic properties.

"Cerebro-spinal meningitis," by Dr. D. G. Thomas. In this paper Dr. T. professes to present a general account of the etiology, pathology, and therapeutics of the disease; it having prevailed, as an epidemic, with a fearful ratio of mortality, in Central and Western New York, during the spring and winter of 1857.

Had the author confined himself to an exact history of cerebro-spinal meningitis as it presented itself during the epidemic just alluded to, with the nature and results of the treatment adopted for its control, he would have furnished a valuable addition to the materials necessary for a proper understanding of the etiology, nature, and management of one of the most malignant and uncontrollable of the acute affections the physician is called upon to treat.

In its present form, the paper of Dr. T. adds nothing to our previous stock of knowledge, and can scarcely be received as a full and comprehensive exposition of what is actually known in respect to the disease of which it treats.

The next paper, by Dr. J. V. Kendall, is on this same disease—or, as he terms it, "the brain fever," as it prevailed during the winter of 1857, in Onondaga and some other counties of New York.

The description of cerebro-spinal meningitis as given by Dr. K., is very full and clear, and well illustrated by the detailed history of a number of cases. In regard to treatment, the author remarks that venesection was practised in one case with a favourable result, but in no other case dared he resort to the remedy, on account of the evident tendency to rapid and fatal prostration which was invariably present.

Anodynes, even in large doses, seemed in the early stage to increase the watchfulness; but subsequently, and after an evacuation from the bowels had been procured, they often quelled that intense restlessness like a charm.

Cold applications to the head, in some cases, appeared to be pleasing to the patient, in other, and the majority of instances, warm fomentations, as hops steeped in warm water, applied to the scalp, with heat to the lower extremities, were productive of a good effect.

In cases in which the brain and spinal nerves had become, as it were, benumbed, much present benefit was derived from the application of several blisters to various parts of the surface, particularly upon the neck. When, in the first stage, the patient was semi-delirious and tossing about with pain, calomel, in large doses, was found to be the best remedy—a state of ease and quietness generally ensuing so soon as the calomel produced a free discharge from the bowels. In all stages of the disease, when the bowels are inert, procuring a free discharge of dark offensive stools by the administration of calomel, has the effect of rousing the patient from his state of stupor.

In the early stage of the disease, quinine was found to be utterly useless as a means of arresting its progress. Subsequently, however, to the first stage, when there were still much restlessness and wakefulness, its use, in full doses, sometimes induced perspiration and a state of calmness; still later in the disease, in smaller doses, it had some value as a tonic.

If the patient survive the first period of the attack, but sinks then into a state of indifference, according to Dr. K. nothing is left for the physician to do but merely to watch the progress of the case, and meet whatever symptoms arise with their appropriate remedies. On many days it will be apparent that the efforts of nature are doing as much for the patient without as they could with his assistance. Whatever treatment may be necessary during this stage, it must be of an alterative, stimulant, and tonic character.

There is still, though not in this connection, another paper in these *Transactions*, on cerebro-spinal meningitis; it is by Dr. T. H. Squire, who treats of the disease under the name of "congestive fever," giving as synonyms, pernicious, spotted, and brain fever, typhus petechialis, and its correct denomination, cerebro-spinal meningitis. Dr. Squire presents the history of forty-three cases of the disease, with a view to its faithful delineation in the most fatal form under which it prevailed, during the winter and spring of 1857, in Elmira and other villages of the State of New York. Most of the cases are given in detail, and furnish very interesting data for the study of the pathology of one of the most formidable of the acute affections of the nervous centres.

Of the forty-three cases reported by Dr. S., thirty-one were in males and twelve in females. Seven of the patients were between 1 and 2 years of age, seven between 4 and 5 years, eight between 5 and 10 years, five between 10 and 15 years, five between 15 and 20 years, four between 20 and 25 years, and seven between 30 and 41 years. Thus, as in most other epidemics of cerebro-spinal meningitis, children and young persons, especially boys, were by far the most frequent victims of the disease.

In regard to the duration of the disease in the 43 cases recorded by Dr. S., 2 terminated in two hours, 2 in four, 3 in six, 1 in seven, 4 in twelve, and 1 in sixteen hours; 5 terminated in one day, 5 in two, 6 in three, 3 in four, 4 in five, 1 in six, 1 in nine, and 1 in ten days; in 2 cases the disease continued for eight weeks, in 1 four months, and in 1 ten months.

The fatal cases only are reported by Dr. S. How many were attacked and recovered, he is unable to say. He has no doubt, however, that a number had the disease in a very mild form, and speedily recovered under treatment; but he thinks that the number of individuals who had violent headache, vomiting, jactitation, dilated pupils, local paralysis, or any well-marked evidence of effusion or even extreme congestion of the brain, and fully recovered, must have been very small.

The symptoms were very uniform in all the cases. A chill, headache, vomiting, prostration, morbid sensitiveness of the skin, jactitation, coldness of the surface, wildness of expression, dilated pupils, irregular breathing, paralyzed deglutition, wry neck, retraction of the head, dulness or abolition of the senses, pulse but little affected, bowels quiescent, petechiæ, delirium, convulsions, coma; many or all of these symptoms are present in every case. The diagnosis is therefore not difficult, especially when the disease is fully established.

The prognosis is extremely unfavourable. There is far more hope of avoiding the disease by prophylactic measures than of curing it when once established.

In respect to treatment, Dr. S. prefers, during the cold stage of the attack, the free use of brandy and other stimulants; but if the patient survive this period, and a severe paroxysm of fever sets in, with unmistakable evidence of cerebral congestion, he questions whether the lancet might not be admissible, or even judicious. It is a sad truth, however, that in the more formidable cases all treatment was found to be alike unavailing.

We now turn back to a report by Dr. B. Fordyce Baker, "On the Comparative Use of Ergot and the Forceps in Labour," or, to speak more exactly, a contrast of the indications which indicate the use of one of these agents, in aid of parturition, in preference to the other. The subject, which is an important one, is treated with great judgment; though, in the course of its discussion, Dr. B. has not, in reference to the proper use or abuse of either the ergot or the forceps, presented anything new.

He would, and, we think, very properly, restrict the use of the ergot to a very limited number of cases. The concourse of circumstances which warrant its use are seldom met with in those cases where it might prove advantageous. As a means of preventing hemorrhage in cases of prolonged labour, he speaks highly of its effects. To this end, he would administer the ergot immediately before delivery, when the head is on the perineum and about to be expelled. It is an effective agent, also, for the arrest of hemorrhage in cases of partial presentation of the placenta, and in cases of post-partum flooding, except when this occurs in women of a weak, delicate, lax fibre, characterized by pale countenance, spare limbs, slow and inefficient labour-pains, and feeble, though perhaps rapid, pulse. In such cases Dr. B. considers that the ergot should never be administered except in conjunction with opium, or until the exhausted powers of the nervous system have been restored by the use of opium.

As a remedy for retention of urine subsequent to delivery, Dr. B. has found the ergot so uniformly efficacious that, for some years, he has not had occasion to employ the catheter to empty the bladder. He usually gives it in the form of tincture, twenty drops for a dose, every half hour, until a free discharge of urine occurs.

After a brief sketch of the indications for the use of the forceps, and of the dangers attendant upon an improper and unskilful resort to them, Dr. B. remarks in conclusion:—

"I must state my conviction that the more enlarged is the clinical experience, and the more accurate the observation, the more rarely will the ergot be used before delivery; and, furthermore, that the fear of delay in labour will be greater than the apprehension from the use of forceps. McClintock and Hardy gave the ergot in the second stage, on account of inertia, in nineteen cases, after which it was necessary to deliver with one or both blades of the forceps. In ten of these cases the child was lost. The death of the child could not have resulted from the use of the instruments, and must have been due either to the ergot or the protracted labour."

The following case of fracture of the cervical vertebræ, proving fatal not until twenty days after the accident, is related by Drs. Van Dyke and Murdoch:—

A healthy young man, æt. 23 years, fell, June 10, 1857, through the hatchway of a mill, a distance of about 25 feet, and struck the back of his neck. During and immediately after the fall he was perfectly conscious. He complained of pain and immobility of the neck; had some difficulty in moving his arms, and no power of motion in the fingers. In his legs there was complete paralysis of sensation and motion; he had no power over the bladder. On repeated and careful examination of the spine, no fracture could be detected, and the case was supposed to be one of concussion of the spinal cord. The patient gradually improved up to the twentieth day after the accident; the pain and stiffness of the neck had disappeared so as to allow of his rolling his head freely and without pain from side to side; he had recovered the entire use of his arms and wrists, but the paralysis of the fingers still remained; perfect sensation returned in the legs, which were affected with occasional involuntary twitchings. The intellect was clear, the skin natural, the pulse regular, respiration easy, appetite good, sleep at night sound and tranquil, and the bowels, under the use of mild cathartics and enemata, had regained their regularity; the urine was also passed voluntarily.

Such was the condition of the patient when visited on the morning of July 1. At noon of the same day his medical attendants were summoned in haste, and were surprised to find him in a dying condition. He had been moved, a few minutes before, from the lounge on which he had been lying, to his bed, immediately after which he complained that his neck had been wrenched, and that he felt blind. He was almost pulseless, with cold skin and difficult respiration. Stimulants aroused him for a few minutes at a time, when he sank again, and within two hours after his removal he died, having lived twenty days from the time of the accident.

By a *post-mortem* examination it was ascertained that the fifth and sixth cervical vertebræ were fractured. The fifth through its laminæ on both sides, the fragment being so driven backwards as to encroach upon the spinal cord; there was also a portion broken off from its body. The sixth vertebra was also fractured through both its laminæ, but without displacement. The membranes of the cord were slightly injected with blood, but otherwise healthy. No effort at union was visible at the seat of fracture.

A short paper by Dr. Van Dyke comprises statistics of obstetric practice for the four years from February 20 to January 16, 1858. These statistics are valuable when compared with others, with the view to the deduction of general conclusions. In their isolated form they present no prominent points for comment.

A very interesting and valuable communication is presented by Dr. Alden March, on osseous union of intra-capsular fractures of the neck of the femur. It is in illustration and proof of the position assumed by the writer, namely, that, in opposition to the generally received opinion, complete fracture may occur within the capsular ligament, and be followed by union from ossific deposit, without impaction.

The next paper is by the same gentleman as the last; it is the history of a case of urinary calculi, especially interesting from the great age of the patient (87 years); the number of calculi; the dissimilarity in the chemical composition of the calculi spontaneously voided, and the larger and *outer* portion of that extracted by operation; the similarity or *identity* in chemical composition of the centre of the large calculus removed by operation and those passed spontaneously; and, finally, the happy result of the operation.

Both the foregoing papers are accompanied by well-executed engravings.

A report of the mortality of Brooklyn is communicated by Dr. Goodrich, and one containing some judicious remarks on the subject of the registration of births, marriages, and deaths, by Dr. F. B. Hough.

Dr. C. V. Barnett reports twenty-one cases of poisoning by arsenic, from absorption. These cases are the result of the external application of a mixture of arsenic and nitric acid, liberally applied with a swab by a charlatan, for the cure of cancer. The symptoms and phenomena were very similar in all these cases: paralysis, to a greater or less extent, of the upper and lower extremities, or prickling and numbness of the fingers and toes, or pain and distress of both extremities; constant intense thirst; burning pain of stomach, œsophagus, and throat; dryness and heat of mouth and throat; frequent retching, and vomiting of dark-coloured matter; frequent dark, fetid stools; pain and tenderness of abdomen; a frequent small pulse; great prostration of strength; haggard countenance; inability to sleep; extreme restlessness; occasionally headache, giddiness, dry, hacking cough, and swelling of the hands and feet.

All of the cases were treated by a very free exhibition of the hydrated peroxide of iron—large doses at short intervals.

The cases detailed by him, Dr. B. remarks, present conclusive evidence of the incorrectness of the opinion of Blackadder and others, that the injurious effects of arsenic, applied externally, result from its use in quantities so small as not to destroy quickly the organization of the part with, consequently, its power of absorption. In all of them the arsenic was applied in *large quantities*, and always in conjunction with the free use of nitric acid, which, of itself, was sufficient to destroy the organization of the part to which it was applied.

A case of accidental nigrites, in a female 16 years of age, the daughter of a respectable farmer, is related by Dr. W. H. Gardiner. When the patient was first seen by Dr. G., September 15, 1857, the discoloration of the skin had existed for about four years. She presented in the colour of the surface the appearance of a dark mulatto, with the distinctly marked features of a European. Her father was of English, her mother of American birth; both were of light complexion, with light-brown hair and light-coloured eyes. All their other children were of similar complexion, as had been also the patient up to her fourteenth year. Though not particularly robust, she had suffered but little from sickness; had never had the attendance of a physician but once, and that for measles. She had taken little or no medicine. Had regularly menstruated from the age of fourteen years, and without pain.

Soon after puberty some dark-brown spots were observed upon the forehead, which looked, at a little distance, as if covered with fine dust. These spots were not constant, nor did they attract much attention until they had been present about two years. At the age of sixteen she had a slight attack of illness, and it was now noticed that her complexion was rapidly growing darker, and within a month or two it had acquired its present hue. These statements were confirmed by her parents, other relatives, and several reliable friends.

The entire surface was found to be of the same dark hue. At a short distance she presented much the appearance of a white person who had been painted with a thin coating of lampblack, through which some appearance of the original hue of the surface was apparent; with here and there spots, from a few lines to a fourth of an inch in diameter, which were as black as the skin of the darkest African. On removing the cuticle from one of these spots without drawing blood, a portion of the pigment scraped upon the point of a lancet had much the colour and appearance of lampblack mixed with mucilage.

The hair of the patient had changed from its original brown to black, and become coarse and straight. Her eyes were light hazel, the whites presenting that pearly appearance so peculiar to the coloured races. Every portion of the exterior was free from the slightest icterode tint. She was thought by her friends to be darker on some days than others; an effect, probably, of difference of light. Her mind was active, and had evidently been cultivated with much care. Her manners were gentle and agreeable. She complained of no pain except, occasionally, of a slight uneasiness immediately under the right scapula, which was aggravated by fatigue. Her appetite was good—her digestion easy and regular. She was not emaciated; slept well, could lay without uneasiness on either side or upon the back; had no cough, no palpitation of, or unpleasant feeling about, the heart; tongue, pulse, and respiration healthy. No disease of any of the organs could be detected upon the most careful examination. She exhibited slight nervous irritability, and some evidence of general weakness; less, however, than might be supposed to result from the anxiety and chagrin she could not fail to experience from the consciousness of her very singular appearance.

Soon after the discoloration became evident a physician was consulted, who induced ptyalism, but with no benefit, or, as her friends think, with the effect of making her worse and darker. Excepting this, she had taken no medicine excepting some simple bitter teas prepared by her friends, and the decoction of some roots sent her by a German quack. A bath of nitro-muriatic acid and water was used by her once or twice, without any apparent effect.

On the 1st of October, on returning from a funeral, she was suddenly attacked with nausea, vomiting, and purging, which continued, with little intermission, over three days; she was then seen by Dr. Gardiner, who found her in bed, lying heavily on her back; her pulse too frequent to be counted, and barely perceptible at the wrist; tongue dry and slightly furred; some thirst; extremities and entire surface cold. A pill of camphor, opium and camphor, was prescribed, with brandy, and sinapisms to the extremities; by these the patient was apparently relieved. The vomiting ceased, and the surface became warmer and more natural. The same treatment was continued; another pill being directed at the end of six hours. At the end of eighteen hours, the vomiting and purging had not returned; extremities warmer; pulse still scarcely perceptible; surface covered with perspiration—death from exhaustion soon after ensued.

There follows next an address "on human longevity," being the annual address delivered before the medical society of Albany County, by Dr. S. H. Freeman. The circumstances which most affect human health and lengthen out or cut short man's career this side the grave, are subjects of deep interest to every class of the community. To prevent disease and decay, to promote strength, and to prevent the waste of vitality in the human frame, is a more easy, certain, and agreeable procedure than to cure disease and repair its ravages and waste when it has once occurred. The subject of hygiene is, however, one as vast almost as it is important. In the address before us we have a few hints in reference to it in one of its many aspects—scarcely, however, touching upon, much less developing fully, the subject.

Under the head of the "Vice-President's Address," we are presented with a most voluminous and interesting table, running through some two hundred and fifty-six pages, comprising carefully tabulated statistics of the private practice of Dr. Thomas C. Brinsmade, for the space of twenty-one years. The number of cases included in these tables is 37,872. Of these, 13,976 were zymotic: 1,047 constitutional; 19,883 local; 454 diseases of children; 1,328 diseases of women; 1,184 accidents; 157 unclassified diseases. Of the whole number of cases 15,731 were males, and 22,141 females. The greatest number of the cases, 11,022, occurred in summer; the next highest number, 9,454, in spring; the next highest number, 8,926, in winter; the smallest number, 8,470, in autumn. Dr. B. gives the ages of his patients from birth to one year, from one to five years, from five to ten years, and after that in decades. In the tables the number of cases of disease for each month of the year are arranged in separate columns, with the depth and number of rains, the prevailing winds, and the monthly mean of the thermometer, placed at the head of the columns.

The number of fatal cases recorded in these tables is 765, making the entire mortality a trifling fraction over two per cent. In reference to the mortality of particular diseases we find that the number of cases of *bronchitis* treated were 5,530, of which 7 proved fatal, or .001 per cent.; of *pneumonia*, 468, fatal 41, or .09 per cent.; of *croup*, 359, fatal 20, or .05 per cent.; of *scarlatina*, 585, fatal 37, or .06 per cent.; of *measles*, 459, fatal 3, or .007 per cent.; of *dysentery*, 809, fatal 27, or .03 per cent.; of *cholera infantum*, 392, fatal 48, or .12 per cent.; of *puerperal fever*, 2, fatal 1, or .50 per cent.; of *puerperal peritonitis*, 3, fatal 1, or .33 per cent.; of *puerperal convulsions*, 5, fatal 2, or .40 per cent.

The first of the tables of Dr. B. is designed to show the influence of the seasons on the miasmatic and pneumonic diseases.

"So far as heat is concerned, these two classes of disease are the direct antitheses of each other—the latter, the pneumonici, retiring as the vernal and summer heats increase—the former, the miasmatici, advancing or receding with the wave-tides of heat and humidity."

"In Table II. we have a striking exhibition of the influence of heat in developing the two miasmatic diseases, diarrhœa and cholera morbus, and its equally striking influence in diminishing the number of cases of the two great pneumonic diseases, bronchitis and pneumonia.

"An examination of the table will show that there has been, during the past twenty-one years, a constant increase in the number of cases of bronchitis, from January to March inclusive, though the range of the thermometer has been from 29° in January to 34° in March. Here is an apparent contradiction of our first deduction, that the number of cases of bronchitis lessened as the heat increased; but when we consider that February and March are the two most inclement months of the year, on account of the sudden and extreme variation of temperature, and the prevalence of high and long-continued winds, we find that sudden variations of temperature are more conducive to the disease than either long-continued heat or cold. But in May, when the thermometer has risen from an average of 34° in March to an average of 52°, we find the number of cases of bronchitis has diminished from 800, in March, to 520; and coincident therewith, we find an increase in the number of cases of diarrhœa from 125, in April, to 220. In June the thermometer indicates a mean temperature of 67°, an increase of 15° on the preceding month; and the number of cases of bronchitis has fallen from 520, in May, to 280, and the number of cases of diarrhœa has increased from 220 to 465. In July there is a further increase of heat of about 6°, and an increase in the number of cases of diarrhœa from 465 in the preceding month, to 1,120; and a coincident diminution of the number of cases of bronchitis from 280, in June, to 180 in July and August. This sudden increase in the miasmatic disease is to be attributed to the combined influences of long-continued heat and drought, and the prevalence of the south wind for the two and a half preceding months. With the decrease in the temperature in August, we have a decrease of 100 cases of diarrhœa; but it is not until October that the effects of the summer heats and winds have apparently exhausted themselves."

"In Table III., in which is presented a summary of all diseases treated during the twenty-one years, we find a constant increase in the number of cases treated from December to March inclusive, in which latter month is shown the effects of high winds and sudden and extreme variations of temperature in an increase of nearly 400 cases, chiefly pneumonici, over the number treated in the preceding month, and a decrease of 250 cases over the number treated in April. In June there is a slight decrease, but in July there is a sudden increase of 1,000 cases over 3,160 in June, caused entirely by the greater prevalence of the miasmatici referred to in the preceding table and context. From this time on the number of cases constantly decrease with the temperature, until the minimum number of cases is reached in November. The minimum of temperature is reached in January, and is signalized by an increase in the number of cases, chiefly pneumonici."

If every physician would keep accurate records of his practice, and arrange and publish them, say every five years, in the form of those presented in the volume before us, by Dr. Brinsmade, within a very short time we should be put in possession of the materials for the most reliable statistics on many important points connected with the history and etiology of disease. Full and excellent as are the tables of Dr. B., with a very little additional labour they could be made to embrace many important particulars which he has omitted.

The next paper of general interest is the history of a case of enormous diffused traumatic aneurism of the axilla in a man 57 years of age, from subcutaneous rupture of the artery caused by dislocation downwards of the head of the humerus, in which the subclavian was ligated; the operation being followed by repeated hemorrhage from the wound till the forty-first day subsequently; finally, suppuration of the aneurismal tumour with hemorrhage occurred, with final recovery, related by Dr. Reed B. Bontecou.

The interesting features of this case are thus summed up by Dr. B.

"The novel manner in which the aneurism was produced, its large dimensions, elevating the clavicle and rendering the operation difficult. First distinct pulsation in radial artery detected twelve days after the operation; separation of ligature on the ninth day after operation; secondary hemorrhage sixteen days after operation, and seven days after the separation of ligature. The repeated recurrence of hemorrhage during twenty-six days; extensive inflammation of the neck from pressure; the inefficacy of perchloride of iron as a styptic; the suppuration of the sac and hemorrhage from it; and the almost complete paralysis of sensibility and motion in the arm."

A description and delineation of Dr. Sims' uterine elevator follows, and then a description and delineation of Dr. Armsby's instrument for the radical cure of inguinal hernia, which closes the professional papers of the present volume.

In relation to Dr. Armsby's instrument its object is to introduce a single thread, as a seton, through the hernial sac and inguinal canal, with the view of inducing inflammation, adhesion, and occlusion of the sac and canal up to the internal inguinal ring.

A hollow curved metallic instrument, fixed in a handle, with a smooth rounded point, having an opening just below the point, is passed, after the reduction of the hernia, into the inguinal canal, so as to carry before it the skin of the scrotum and the hernial sac, as far as they can be made to go with ease. A properly formed needle, with an eye near its point, is passed into the instrument and made to project at the aperture near its end, and perforate the soft parts in front of the internal ring, when the needle is to be threaded and withdrawn. It will, of course, leave the thread or seton within the entire length of the sac and canal—one end coming out through the skin above and in front of the internal ring, and the other at the lower part of the scrotum. A truss is applied for a few hours; inflammation quickly ensues, which may, if necessary, be increased from time to time by moving the thread. The patient is to remain for at least one week in a recumbent position, and the seton is to remain from eight to twelve days.

2. The proceedings of the sixty-sixth annual convention of the *Connecticut Medical Society*, held May, 1858, present us, after the minutes of its proceedings, with the annual address of the president, Dr. Benjamin Hopkins Catlin. This is an able and manly production. Its leading theme is the nature, extent, object, and aim of legitimate medicine, and its claims upon the respect, con-

fidence, support, and protection of the community, for whose benefit its professors labor—for whose good they suffer—for whose defence from pestilence and death, and for whose succour in the season of sickness and suffering they are ever willing to forego ease and comfort, and to risk at the post of duty even life itself.

Several reports, chiefly of local interest, follow the address of Dr. Catlin. Among these, that of Dr. E. K. Hunt, in relation to the registration of births and deaths, showing the duty which physicians owe to themselves and the public, to aid in the accomplishment of such registration in the most complete and satisfactory manner; and pointing out the advantages they will derive from the facts developed by a full and correct registration, in their efforts to prevent disease, based upon the acquaintance they thus acquire of its favourite localities and subjects, its endemic causes, and of the circumstances connected with individuals, predisposing them to its occurrence. The short sanitary report of Hartford County, by Dr. A. W. Burrows, will also be read with pleasure and profit.

The next paper is on "puerperal convulsions," by Dr. C. A. Lindsley. In this dissertation, while we meet with nothing absolutely new, the summary given by the author of the pathology and treatment of puerperal convulsions is marked by good sense and sound judgment. The subject, however, is not examined in all its length and breadth.

Dr. L. points out the radical error committed by our leading medical writers in locating the immediate cause of puerperal convulsions in the brain, when all modern investigations and observations go to establish the fact that the entire class of spasmodic and convulsive diseases belong to the spinal cord, the medulla oblongata, and tubercula quadrigemina. He denies that, as a general rule, the convulsions in this disease are dependent on encephalic engorgement and effusion ; it being more than probable that both the engorgement, and the effusion into the ventricles, and between the membranes of the brain are results—consequences of the disease and not its cause. It is true, Dr. L. admits, that occasionally the reverse of this is true. If, during the violent exertions of the propulsive stage of labour, rupture of a bloodvessel occurs, giving occasion to effusion of blood, and, as a consequence of this, counterpressure upon the medulla oblongata ensues, convulsions may be the result of the accident; but, if in the course of a paroxysm of puerperal convulsions resulting from irritation of the os uteri, rupture of a bloodvessel with effusion of blood in the brain takes place, instead of being the cause, the rupture and effusion are in this case clearly the result of the disease. This is true whatever may be the relative extent of the effusion in the two cases, and though in both it should occupy the same locality.

The causes of puerperal convulsions, Dr. L. very correctly concludes, must be such as act immediately upon the spinal cord, the medulla oblongata, or tubercula quadrigemina, or which are transmitted to it from the extremities of the excito-motor nerves—centric or eccentric causes.

Dr. L. points to the fact of the almost invariable presence of albuminuria in cases of puerperal convulsions—the exceptional cases are so rare as to render the inference irresistible of a relation more or less intimate, of cause and effect, between the two facts—albuminuria and convulsions.

"Nor is the hypothesis, that the diminution of albumen in the blood and albuminuria are necessary conditions of eclampsia, at all inconsistent with the fact that seven-eighths of the cases of eclampsia have occurred in primiparous women. Because, in first pregnancies, the greater resistance of the abdominal parietes causes the uterus to be more strongly applied to the posterior walls of the abdomen, compressing the renal vein, causing congestion of the kidneys, obstructing the venous circulation, and forming a mechanical obstacle to the regular fulfilment of the functions of the neighbouring organs, and thus bringing about the very organic conditions most favourable to the production of albuminuria. So, also, women affected with rachitis are more liable to convulsions, because of their deformity and the limited space within the pelvis. The necessary compression which attends the development of the uterus disposes to the same result. Hence it would appear from the constant concurrence of albuminuria and eclampsia, that the altered state of the blood—which is a necessary consequence of long-continued albuminuria—is a direct irritant of the spinal axis, or, if not the sole excitant of the spasm, renders that organ more susceptible to the influences which reach it from other sources."

Speaking of bloodletting, which is the leading, almost the only remedy relied upon by medical writers for the relief of an attack of puerperal convulsions—and which, by many, is directed to be pushed to a most profuse extent—Dr. L. admits that, in the majority of cases, it is very strongly indicated, for the relief of the bloodvessels of the brain, as well as on account of its sedative action on the spinal system. He considers it curative so far as its effects upon the spinal cord are concerned, and preservative in reference to its effects upon the brain.

"In fulness of the vascular system, bloodletting, besides diminishing the impressibility of the *central* organ by rendering it less susceptible to incident irritation, relieves also the surcharged condition of the cerebral vessels, obviates partially the immense pressure to which those vessels are subjected during the fits, diminishes the danger of rupture and effusion, and removes the counter-pressure from the medulla oblongata. It is because of these prompt and marked effects that the remedy has been so uniformly recommended and practised in all cases. But, while it is often a sufficient remedy for simple convulsions, depending on a turgid state of the circulation, great discrimination and careful judgment are requisite, not only in limiting it within safe bounds, and in detecting indications for other treatment, but also for determining whether in some cases it will not be injurious instead of curative. If bloodletting is indicated for the reasons which have been mentioned, it is perfectly evident that it is contraindicated, and would prove extremely dangerous, in cases where those reasons do not exist; that in delicate anæmic women, copious depletion would be an additional cause of convulsion, because, as has been shown, deficiency of blood is an irritant of spinal action. It is, however, too much the fact that the constant teaching of the books, combined with the absence of positive knowledge of the true seat and etiology of the disease, has led to the blind and indiscriminate routine of bleeding every poor patient perchance to—I had almost said to death—or perchance to life, as chance alone decides—the chief guide of practice being the continuation or cessation of the fits."

"To bleed is the rule, absolute and imperative—bleed, bleed—no matter what the condition of the patient. No effort is directed to discover any cause of spinal irritation, which should be removed; the patient has fits; therefore bleed her. No matter if the stomach is loaded with indigestible food, or the bowels with hardened feces. No matter if the bladder is distended to bursting. No matter what the state of the uterus, or what the condition of the vascular system, the rule is still arbitrary—bleed boldly and fearlessly. Now this is rank and rash empiricism, and in the present state of physiological knowledge, inexcusable. And yet, there can be no doubt that many practitioners, influenced by the teachings of the books, have carried depletion to a fatal excess, and even practised it when it ought to have been altogether avoided. It cannot be questioned that if carried beyond proper limits, bloodletting is itself a cause of convulsions."

"It would appear, then, that after the circulation is reduced, either by proper depletion, or from other causes, to somewhat below par, bloodletting acts no longer as a sedative, but becomes itself a most certain irritant of the spinal system. The *continuance* of convulsions, therefore, is not a reliable indication of further bleeding; but the state of the circulation in the interval of the fits, is the only proper criterion, regard being had to the different effects of an engorged and an empty state of the spinal vessels."

Based on the fact, pointed out by Dr. Marshall Hall, that in all cases of true convulsions the glottis is wholly or partially closed, causing an increase of both the cerebral and spinal congestion, and the several cases on record in which the simple excitation of a full inspiration has prevented the occurrence of a convulsive paroxysm, Dr. L. suggests the dashing of cold water in the face in cases in which puerperal convulsions are threatened. The sudden shock produced by this means, in consequence of its reflex action on the respiratory muscles produces an involuntary inspiration, thus opening the glottis and relieving the nervous centres from their state of congestion. Denman gives the history of a lady, whose every labour-pain was attended by a convulsion; but by sprinkling the face with cold water at the commencement of each uterine contraction, the convulsions were prevented, during the remainder of the labour. So simple a remedy can do no harm, and even if it does not prevent a convulsion it takes off a great amount of vascular pressure from the nervous centres, and lessens the amount of venous blood in the system every time it uncloses the glottis.

Dr. L. suggests, also, the application of cold water to the head. In a continued stream its application lessens the distended state of the cerebral circulation and relieves, thus, the counter pressure upon the intercranial portion of the spinal system. In the form of douche it would tend to excite an inspiration and thus dilate the glottis. When applied along the spine it should be continuous, because the intermittent application excites instead of allaying irritation.

Opium and its preparations have been vaunted by several writers as constituting a remedy of great efficacy in puerperal convulsions. Dr. L. considers the opium to be proper only after bleeding, or in cases attended with a state of exhaustion and anæmia—under such circumstances, it acts as a sedative, whereas, in patients of a plethoric and vigorous habit, it acts as a stimulant of the spinal cord.

In relation to the means adapted for the removal of the eccentric causes of puerperal convulsions, or those which affect the peripheral extremities of the incident excitor nerves, Dr. L. remarks:—

"Numerous instances attest the fact that large accumulations in the stomach or intestines, whether of food, or feces, or worms, or foreign bodies, excite the disease by the irritation they induce being transmitted to the central organ, thus giving rise to convulsions by reflex action. The removal of such offending substances is obviously demanded whenever they are found to exist. But the manner in which it should be accomplished is important. There can be but little difference between irritant drugs and irritant feces, and yet the most drastic purgatives are unceremoniously exhibited, which too often is only to change one cause of irritation for another. The prolonged effect of powerful cathartics upon the surface of the intestines already irritated to the highest intensity, must be anything but favourable. It is but fair to presume that copious injections of simple water would be quite as effectual, and vastly safer, inasmuch as they are more rapid in their effect, and do not remain to fret the bowels after their mission is accomplished. Their action might be assisted, if necessary, by the addition of castor oil or turpentine. If indigestible food, or an overloaded stomach excite the fits, an emetic of the sulphate of zinc should be administered. If the subject, however, is plethoric, venesection should precede the emetic, on account of the increased distension of the cerebral vessels in the effort of vomiting. Mr. Vines mentions a case of convulsions which, after resisting for two days all the usual remedies, including delivery, ceased immediately upon withdrawing from the bladder five and a half pints of turbid and highly ammoniacal urine. This case shows the necessity of attention to that organ."

It is, however, in the uterus and uterine passages, as Dr. L. observes, that reflex irritation acts most energetically and with the greatest intensity. In consequence, the question as to the propriety of delivery becomes one of importance. The rule laid down by the author is, that if the condition of the mother is perilous, and the continuance of the child in the uterus or passages will be evidently productive of more irritation than would be caused by a resort to manual or instrumental interference, then artificial delivery should be resorted to, as soon as the condition of the os uteri will permit. Dr. L. admits that this rule is indefinite, inasmuch as the conditions upon which it is based are only approximations. The amount of irritation in either case not being constant quantities, an accurate comparison cannot be made. Nor is it possible to lay down a definite rule applicable to all cases; the peculiarities of each case being such that no rule can cover them.

The two succeeding papers—the one by Dr. Charles L. Ives, presenting a sketch of human embryology; and the other, by Dr. L. S. Paddock, on the surgical diseases of the rectum—are both interesting and instructive productions. They point out, it is true, no new facts, nor give any new deductions from the facts already known; their object is simply to afford a concise and accurate summary of the actual state of our knowledge in reference to their respective subjects.

The proceedings before us close with biographical notices of Drs. W. C. Williams and John S. Peters. The latter was at the period of his death, among the oldest of the physicians of Connecticut; being born in Hebron, in that State, in 1772. He attended lectures in Philadelphia, in 1796, and settled as a physician in his native village, in 1798. His death took place in March, 1858, in the 86th year of his age. Throughout the United States there are but here and there remaining a solitary survivor of those physicians who entered upon their professional career previously to the commencement of the present century; even of those whose birth took place during the early period of the nineteenth century, but very few, comparatively speaking, survive.

3. The *Transactions of the Ohio State Medical Society*, at its meeting of June, 1857, commence with the valedictory address of Dr. Peter Allen, the retiring President. The subject of the address is the past and present condition of the medical profession in the State of Ohio, which is treated in a pleasing, lively style. This address, without being very profound or erudite, is replete throughout with good sense and the deepest interest.

The report of the Committee on Obstetrics, by Dr. J. G. F. Holston, discusses in separate chapters the history of midwifery in Ohio, its theory and practice; comprising a consideration of "the frequency of midwifery" and natural labour; tedious and difficult labours, more particularly in reference to ergot as a remedial agent; statistics of natural and preternatural labours; the diseases of puerperal women; and obstetrical literature and education.

In the first chapter, Dr. Holston presents a very lifelike, humorous picture, somewhat in the Flemish style, of the different species of female practitioners who first usurped the practice of obstetrics in the primitive times of Ohio, with a sketch of their several modes of procedure; for it is a historical truth that these rural priestesses of Lucina were of different sects, each having its own peculiar theories, superstitions, dogmas, and practices.

Dr. Holston would appear to be a firm believer in the possibility of a mental shock received by the mother during pregnancy, causing the fœtus in utero to be marked in a manner corresponding with the cause by which the shock was produced.

We regret to see gravely mooted, in a report to a learned society, embracing the medical talents and experience of an entire State, the question as to the power of certain impressions made upon the nervous system of the mother imparting marks of a definite, or indeed any, character upon the person of the fœtus in utero. The fact is disproved by so conclusive a chain of reasoning, that the few occasional instances of remarkable coincidences, like those adduced in the paper before us, present not the slightest valid evidence in its support. We have our doubts, also, as to "violent motions" of the limbs of the fœtus in utero being the result, as Dr. H. supposes, of impressions made upon the mother's nervous system. The sensations attributed to the movements of the fœtus before birth may certainly be rationally accounted for without the necessity of supposing that any movement whatever on its part takes place.

In respect to the employment of ergot in obstetrical practice, Dr. H. remarks: "All who admit its power consider it perfectly safe to the mother, in cases properly chosen. Not so, however, to the offspring; the majority believing that its employment increases the number of stillborn infants by a fearful rate—from fifty to one hundred per cent. even; which is by no means to be wondered at, as the contractions produced by the drug are of a continuous character, never for a moment allowing the fœtal head to recover from that compression which it must necessarily suffer in passing through the maternal pelvis. We cannot better close this paragraph than by some extracts from reports of Dr.

Gaston, of Morristown, whom thirty-one years of practice (*he never lost a mother*) renders somewhat of authority on that subject. He says: 'I have frequently employed ergot in difficult labours, and I am not aware that I have seen deleterious effects to the mother from its use; but it is far otherwise in regard to the child. Whether ergot kills the child or not, I do not know; but I *do* know that, in the majority of cases in which I have used it, or seen it used by others, the child was stillborn. So fully has my experience with it convinced me of its deleterious effects on the child, that nothing but stern necessity can induce me to use it.' The experience of Dr. Schertzer, of Massilon, deduces similar results from a practice of thirty-one years. O. D. Palmer, M. D., of Zelienople, Pa., says: 'Ergot has produced a powerful effect in every case in which I have given it, except one that was supposed to be rupture of the uterus. It has been perfectly successful in every case of placenta prævia where it was administered, causing one continued, persistent contraction of the uterus, thereby preventing flooding till all was delivered. In every case where I gave it a half hour *only* before delivery, the children were dead, and in *every other* case asphyxiated. . . . . I only use it now, and have for several years, in flooding following delivery, where I have always found it successful.'"

"I resort," says Dr. McMeens, in a communication to Dr. H., "but rarely, of late years, to the use of ergot during the process of parturition, as I believe the special indications demanding its aid are seldom sufficiently conjoined with all other circumstances to render it entirely unobjectionable. Lingering labours from uterine inertia alone are comparatively rare, and when the result of rigidity of fibre, structural resistance, or mechanical obstruction, it can only serve to aggravate or embarrass delivery in a large proportion of cases. Such has been my experience. And again, I have been disappointed in procuring a prompt display of its powers when most urgent, and subsequently experienced an explosive exhibition when no necessity for its action existed. I generally confine its administration to those cases where hemorrhage precedes, attends, or supervenes on labour. Of its possessing any peculiarly pernicious influence upon mother or child, I have witnessed no unequivocal evidence beyond the production of a severe *hysteralgia* when it had been improperly taken to procure abortion."

Speaking of puerperal fever, Dr. H. refers to the prevalence of the "black tongue fever, or malignant erysipelas," that some seventeen or eighteen years ago desolated the State of Ohio, and to the conjoint prevalence of puerperal fever. In some districts scarcely a single child-bearing woman escaped. In certain of the epidemics of puerperal fever the disease has been confined almost exclusively to the practice of a single physician. Dr. Holston was cognizant of an instance of this kind, which occurred, some years ago, in a city of central Ohio. A physician of high standing in the community was said to have lost some twenty patients in a few months, while no unusual mortality existed in the practice of his colleagues.

Passing by the short report on microscopes and microscopy, and the biographical notices of Drs. Milton Green and D. A. Fisher, deceased, members of the Ohio State Medical Society, we come to the report of the Committee on Surgery, by Dr. John Dawson.

This report presents a concise review of the present condition of surgery. It is marked throughout by good sense, and sound observation. In the perusal of it much will be found to interest and instruct. Under each of the heads into which the report is divided, especially those devoted to a consideration of the mechanical or operative department of surgery, and its scientific and pathological principles—the prognosis of operations, and the mortality attendant upon them—the alleged success of American operators, and the inquiry as to what percentage of favourable results will justify an operation, many judicious remarks and suggestions will be met with—which, if they cannot, all of them, lay claim to entire originality, are, at least, presented in a form and connection calculated to exhibit their true bearing and importance, and to impress them forcibly upon the attention of the reader. We only regret the circumstance of the entire report being of such contracted limits as to preclude the possibility of the author doing entire justice to himself or to his subject.

The next paper is "a short history of the veratrum viride," by Dr. JOHN G. KYLE.

As a remedy in all acute affections the veratrum viride is beginning to attract the attention of physicians in many portions of the United States. By most of those who have tested its curative powers, it is spoken of in terms of praise. Some believe it to be capable of superseding entirely the use of the lancet in certain of the phlegmasiæ, and of producing a beneficial impression on the disordered state of the circulation in affections in which general and local depletion are both inadmissible.

The most prominent effect produced by the veratrum is a very certain, decided, and permanent reduction of the pulse in frequency. According to Dr. K., it possesses this power over the circulation in a greater degree than any one, or, perhaps, all other remedies combined, for which the same property is claimed.

"The great duty of the physician," Dr. K. remarks, "is to subdue all diseased action speedily and with safety to the patient. We know of no article capable of meeting these indications with so much ease, certainty, and safety to the patient, as the *veratrum viride.* By its narcotic powers the pain and irritability are greatly moderated, if not relieved; by virtue of its emetic powers a sudden shock and impression is made on the system, and if a resolution or crisis is not produced, the pyretic symptoms are greatly abated; and, in addition to the general shock, there is a series of new actions and impressions excited, which are of great service in counteracting the disease, and changing the secretions and excretions. It is powerfully nauseant, thereby aiding expectoration, which in an eminent degree assists the capillaries in relieving themselves of their engorged condition."

"To recapitulate, it is actively emetic, but does not occasion a great secretion of bile, but produces free mucous or serous discharges. It induces an unusual degree of paleness and coldness—more or less moisture of the surface —a sense of great exhaustion or dissolution—occasionally a slight and pleasant delirium or hysteria. The pulse is slow, full, and distinct."

Dr. Kyle recommends a tincture of the veratrum to be made by digesting *eight* ounces of the bruised root in one pint of alcohol. Of this he generally gives, at first, ten drops for a dose, repeated every two or three hours; increasing each succeeding dose by one to five drops, until nausea, emesis, or a reduction of the pulse takes place. The size of the dose is then to be lessened, or the intervals between the doses increased, so that it can be borne. To relieve any unpleasant effects that may happen to result from the use of the veratrum, according to Dr. K., a mustard plaster to the spine and extremities—a little syrup of morphia and tincture of ginger internally, with a suspension of the use of the article, is all that is required.

"We would feel as awkwardly situated," says Dr. K., "and as much unprovided for the treatment of pneumonitis, without this article, as we would if we were deprived of cinchona and its preparations in the treatment of intermittent and remittent fevers. We are of opinion that it will prove a valuable agent in the treatment of many inflammatory affections, as gout, rheumatism, peritonitis, &c."

We find next a report on the topography, hydrography, geology, meteorology, mortuary statistics, and the endemic and epidemic diseases of Sandusky, Ohio, by Dr. R. R. MCMEENS. This is a very good report—somewhat superficial it may be on some of the important particulars embraced in it—but it presents no especial points of general interest that claim our notice.

A report from the Committee on Medical Literature, by Dr. WM. J. SCOTT, follows. A few remarks towards the close of this report, on the medical periodical literature of our country, comprise nearly the whole of it, that is devoted to the legitimate subject of the committee's labours.

The report next in order is on uterine diseases, by Dr. R. MCMEENS. It is made up chiefly of four interesting cases. One of hypertrophy of the womb, with excessive flow of the catamenia—mistaken for a case of polypus uteri.

"The novelties of this case," Dr. McMeens remarks, "consist in the nature of the exciting cause, the alternations of hyperæmia which take place, and the pathological character of the uterine hypertrophy. If it were a case of uterine polypi there should have been some manifestation of their existence before so long a period of time had elapsed, and some interruption or supervention of the menstrual profluvia as well as an aggravation instead of amelioration from active exercise. As to the other phenomena, there appears to be an undue vascular determination to the uterus, increasing its vascular capacity, and requiring an unusual accumulation of blood to be discharged at each ovulatory emission, and resulting in a degree of permanent enlargement of the organ by interstitial deposit and muscular development."

The second case is one of intractable dysmenorrhœa, commencing before marriage and continuing subsequently. Under every conceivable mode of treatment the utmost benefit derived from any was merely temporary relief.

The third case is one of intense hysteralgia excited by the use of ergot taken with a view to the production of abortion; while the fourth is one of extensive vesico-vaginal fistula, caused by unpardonable malpractice in a resort to instrumental interference merely to gain time, and the utmost want of skill evinced in the choice and application of the instrument employed.

A paper "on chloroform" is next in order. The author is Dr. R. Thompson, who, very properly, urges extreme caution in the employment of the article. When the chloroform produces a state approaching to asphyxia, which Dr. T. supposes to depend always on the diminished action of the heart, and the consequent inadequate supply of blood to the brain, he believes that the fatal results which are reported as having occurred, are to be attributed mainly to the want of a resort, to "the very simple and ready expedient of laying the patient down with his head lower, if possible, than his body, at the same time commencing a uniform, rather *pouncing*, operation upon the chest, which should be continued until the air-cells of the lungs are freed from the vapour, so as to admit a supply of pure atmospheric air, which is all that is necessary to restore a sufficient degree of vitality to the brain to re-establish and sustain the action of the heart, with all other partially suspended movements."

What the author means by a "pouncing" operation we are at a loss to determine. The verb "to pounce" signifies, primarily, *to seize with the talons or claws:* it is often, however, applied to the quick, sudden movement, or swoop, with which a bird of prey darts upon its victim. We cannot understand how, in either sense, it can be employed to indicate the nature of manipulations that would be calculated to relieve the lungs from any vapour of chloroform they may contain.

The paper of Dr. Thompson appears to have been called forth by the case of Mrs. Morgan, who died in Boston, according to the verdict of the coroner's jury, from the effects of chloroform. In rendering this verdict, the jury considered it to be their duty to warn the public against the use of chloroform as a dangerous anæsthetic agent.

Dr. T. believes that the death of Mrs. Morgan is to be ascribed less to the effects of the chloroform than to the neglect of the proper measures to insure her resuscitation. He deals out to the coroner's jury a merited rebuke for their officiousness in travelling beyond the strict line of their official duties to give advice to the public on a subject in relation to which they were totally incapable of judging.

A very sensible paper on moral insanity, by Dr. Edward Mead, closes the strictly scientific contributions contained in the present volume of *Transactions.* It is a very sensible well written essay. We cannot say, however, that it casts any additional light upon the very obscure subject of moral insanity—in the restricted sense in which the author defines the term—namely: "a disorder or diseased condition of the moral feelings or affections, without necessarily involving any disorder of the intellectual faculties."

That cases do often occur in which insanity is observable only in one or other or several of the moral feelings or affections we are by no means inclined to deny. A number of such cases are on record, and well authenticated. We have, ourselves, met with many. Moral insanity may, in fact, be considered as one of the most common of the forms of insanity. The majority of those whom the world denominates wicked—the incorrigibly depraved and sinful—

many of "the fast young men and women" of our day, are no doubt to be viewed, strictly speaking, as morally insane.

Moral insanity "may be justly considered," as Dr. M. very properly remarks, as the most important of the mental diseases, inasmuch as it is destitute of those outward manifestations which distinguish the outbreak of other varieties, and which seem to be necessary to satisfy the scruples of the unscientific observer. In consequence of thus being unappreciated, it fails to arouse that feeling of sympathy and commiseration for its unfortunate victim, which are manifested by the humane towards those attacked with other varieties of insanity. It is often the occasion of intense suffering to the patient himself, of distressing anxiety to his friends and relatives, and of danger to the reputation, property, or life of those who inadvertently become the victims of his extravagant and unreasonable conduct.

The legal responsibility of the morally insane is a question of deep interest; it is not, however, formally touched upon by Dr. M., and we have no desire to enter now into an examination of it.

4. The *Transactions of the Belmont Medical Society* commence with an essay by Dr. J. G. AFFLICK, on a most obscure, but, at the same time, most important subject—mind, and its insanity. The essay occupies only twelve small duodecimo pages, printed in a large sized type; it is not to be expected, therefore, that the writer can enter very deeply or fully into a subject that has occupied the attention of some of the profoundest and clearest thinkers of past and present times. The first lines even of mental philosophy and pathology are scarcely touched upon by him.

Dr. Afflick is an out and out materialist. That man is altogether a material organization he has not a doubt. That the soul itself is a mere form of matter, must, he thinks, be conceded, according to all the principles of our reason. It would seem to him that mind is a part of the body, and as much subject to the laws which govern the latter as "the secretion of bile is of the liver." Hence, as we cannot expect healthy bile when the liver is diseased, neither can we expect healthy thought when the brain is deranged.

We shall not attempt within the restricted limits afforded by the bibliographic department of a periodical journal to examine the validity of the position assumed by Dr. A. in relation to the nature and manifestations of mind; its inherent powers, and its true relationship to the material universe, nor to inquire into the correct theory of its abnormal manifestations. To do so would be as presumptuous on our part as it was on his, to hope, within the compass of a few short paragraphs, to treat of the intellect of man and its several aberrations.

That the integrity of the mental functions are at all times intimately dependent upon the integrity of their material organ, the brain, we need not hesitate for a moment to admit. There can be no doubt that whatever deranges the physiological condition of the brain deranges, also, to a greater or less extent, the manifestations of mind, by disturbing or impeding its operations, but that no derangement of the mental operations can take place excepting as a consequence of cerebral disease, direct or indirect, is an assumption altogether destitute of any positive proof, and inconsistent with several of the forms and phenomena of insanity—while it leads to serious errors in the treatment of mental diseases generally.

The second article in these Transactions is "remarks on the medicinal virtues of the tincture of veratrum viride, with two illustrative cases," by Dr. E. GASTON.

It is in reference to the powers of the veratrum viride, as a remedy in pneumonia alone, that the observations of Dr. G. refer. In this disease he believes it to be a curative agent of considerable power, and well worthy of the careful study of the profession. In one of the cases detailed—pneumonia of the right lung—the use of the veratrum was preceded by a pretty copious bleeding, and the administration of calomel in combination with nitre and tartarized antimony. In the second case, with the exception of a few doses of nitre and antimony, the veratrum appears to have been the only medicine employed. Both cases terminated favourably and within four days after the veratrum was commenced with. If these were truly cases of genuine pneumonia, which, we must say, there is great room to doubt, they speak loudly in favour of the curative virtues of veratrum viride in that disease.

The next article is "observations on the use of ergot as a hæmostatic and abortive," by Dr. J. G. Afflick.

According to the experience of the author, not only does the ergot act well as a hæmostatic previously to delivery, but it possesses also "a supreme power" in the control of post-parturient hemorrhages. Whenever the system becomes fully imbued with the ergot, his observations confirm him in the opinion that there is little to be dreaded from the occurrence of flooding.

"There is no medicine in the whole materia medica," remarks Dr. A., "that has been so indiscriminately used as ergot. I know physicians, with whom it is the alpha and the omega" in cases of uterine hemorrhage, (?) "disregarding all symptoms. Such a blind practice is certainly very censurable; and, of a consequence, in the long run, must be productive of much mischief; for I hold it as an incontrovertible axiom, that, in midwifery, where labours are natural, the less you interfere the better. Other physicians tell you that in all cases, ergot is sure death to the child. This is not my experience. I have given it in every form, and under all circumstances, and I feel warranted in saying that the charge of infanticide, from this cause, is groundless. I would agree that where the system of the mother has become saturated with the medicine for a long time—where she may have taken it as her daily bread, that injurious effects may be produced, tending to the destruction of herself and fœtus; but that a few doses, or that a continuation of it for two or three days will bring forth a stillborn child, is, with me, a ridiculous assertion. I say this after thirty years' experience with the drug."

Now, one of two things is very evident, either we do not understand Dr. A., and it is certain that his language is none of the clearest, or Dr. A. does not understand the true grounds upon which all experienced obstetricians object to the use of ergot as a facilitator of labour, excepting under particular circumstances. That a resort to ergot in cases and at a stage of labour unadapted to its use is calculated to produce much and serious mischief, including even the destruction of the child, has been proved beyond the possibility of doubt.

As an abortive during the early, and even to a somewhat advanced period of utero-gestation, we have not the slightest confidence in the ergot. With Dr. A. we have known it, in several instances, to be taken for the purpose of causing abortion in large and repeated doses, for days at a time, without its producing the slightest effect upon the uterus, the woman passing through her pregnancy without accident, and being delivered at the proper time of a strong, healthy child.

We are next presented with reports by Drs. Campbell, Estep, and McBane, of the case of a young man between sixteen and seventeen years of age, whose leg was amputated on account of a tumour. The so-called tumour consisted in a very great enlargement of the entire left leg and foot, but most prominent at the upper five or six inches of the limb. The swelling, the surface of which was irregular or lobulated, had a doughy or cheesy feel. The cuticle was covered with numerous small vesications, and of a pale pinkish hue, and rather cool and clammy. Intense pain was experienced by the patient along the shaft of the tibia to the ankle; the pain being increased by motion.

In the course of eleven days the tumefied limb was less warm, of a darkish-brown in some places, and in others of a leaden hue. At the seat of an incision, which had been made some time previously in the tumour, sphacelus had commenced. The patient was greatly emaciated; his lips blanched; his pulse very frequent, small, and feeble; his tongue slightly coated; his bowels inclined to diarrhœa; his appetite moderate and failing.

Amputation was decided upon as presenting the only probable means by which the life of the patient could be preserved. It was accordingly performed under the influence of chloroform, and at the end of thirty-three days subsequently the patient was, to all appearance, entirely well. On the sixty-first day after the operation the patient, in consequence of very imprudent exposure, took cold, pneumonic symptoms set in, and, at the end of twenty-seven days, death took place.

An incision down the anterior tibial surface of the amputated leg to the bone gave escape to about three pounds of a dark, muddy-coloured, sero-purulent fluid, while a longitudinal incision through the posterior muscles of the leg laid bare a number of cavities, some filled with the same kind of fluid as above, and others with laudable pus. In cutting through the deep-seated muscles a large sac was opened containing some three or four pounds of coagulated blood, with some light-coloured fibres running through it. The coagulum had an irregular or lobulated form, and very much resembled, according to Dr. Cobb, a hog's brain, in colour, shape, and size. At its upper and inner part were several portions of sequestrum, one side of each having a worm-eaten appearance.

In consequence of the very loose, superficial, and unscientific account which is presented of it by all the gentlemen connected with this case, it is impossible for us to arrive at any positive or satisfactory conclusion as to the true character of the disease with which the amputated limb was affected. Of the propriety of the amputation we think, however, even judging from the very imperfect description of the pathological appearances with which we are furnished, there cannot be a doubt.

The report on "the improvements in medical science," by Dr. Wm. Estep, which is next in order, presents a concise summary of a few of the more recent additions made to our therapeutical agents. It requires no particular notice.

The remainder of these Transactions consists in an account of a trial of a mother for child murder, and another of a trial of a medico-botanical practitioner for mal-practice. Neither presents any points of especial interest.

The murder of the child, after it had been born and breathed, by an incision with a cutting instrument from ear to ear, and down to the vertebræ—dividing the trachea, muscles, œsophagus, arteries, veins, and nerves of the neck—appears to have been proved beyond the possibility of doubt; as well, also, as the privity and consent of the mother to the murder, even if she did not herself commit it.

The defence of the prisoner was based mainly upon the plea of unaccountability, because of her insane state of mind both before and subsequent to the birth of the child. We confess that the evidence in proof of such insanity strikes us as particularly loose and inconclusive. The plea of insanity is now advanced in almost every case of felony brought before our courts; it is all important, therefore, that the evidence presented in its support should be clear, positive, and conclusive, so that the ends of justice shall not be frustrated, on the one hand, by the clearance of the guilty on a false plea of moral unaccountability, nor, on the other, the cause of humanity wounded by the conviction of those whose mental condition is evidently such as to render them guiltless of any premeditated and malicious act.

The verdict of the jury in the case just referred to is a curiosity of its kind. They find unanimously: "1st. That the prisoner was not proven guilty beyond a reasonable doubt; 2d. That the probable hypothesis was that the husband of the prisoner committed the murder; and 3d. That if the prisoner was the murderer, she was not of sane mind at the time the act was committed." They, therefore, returned a verdict of "not guilty."

The most remarkable feature in the second case is, that the jury actually found the medico-botanical practitioner guilty of mal-practice, and mulcted him in damages to the amount of three hundred dollars. D. F. C.

Art. XIX.—*Reports of American Institutions for the Insane.*

1. *Of the New York State Lunatic Asylum, for* 1857.
2. *Of the New York City Lunatic Asylum, for* 1857.
3. *Of the New Jersey State Lunatic Asylum, for* 1857.
4. *Of the Friends' Asylum, Philadelphia, for* 1857.

1. From the report of the New York State Lunatic Asylum, we take the following summary of the medical history of that institution during the fiscal year terminating with the 30th of November, 1857:—

	Men.	Women.	Total.
Patients at the beginning of the year	231	230	461
Admitted in course of the year	129	106	235
Whole number	360	336	696
Discharged, including deaths	122	123	245
Remaining at the close of the year	238	213	451
Of those discharged, there were cured	41	54	95
Died	24	8	32

Causes of death.—Exhaustion from mental disease, 12; phthisis pulmonalis, 8; epilepsy, 4; general paralysis, 3; apoplexy, 2; suffocation, 1; phlebitis and metastatic abscesses, 1; typhoid fever, 1.

In each of the cases of general paralysis (*paralysie générale*), "the disease brought to its close a life of long-continued intemperance and debauchery." The death by suffocation was that of an aged and feeble man. "In taking his food voraciously, a piece of meat lodged in the pharynx, and death took place before assistance could be rendered."

"It is gratifying," says Dr. Gray, "to be able to record a decided improvement in the condition of patients at the time of their admission. Only a few had been bled and reduced by a depressing course of treatment, and nearly all (the exceptions being a few among those transferred directly from the county-houses) gave evidence of careful and humane treatment."

Of the 235 patients received in the course of the year, 199 were admitted for the first time, 24 the second, 7 the third, and 5 the fourth. Twenty of those who were readmitted had formerly been discharged cured.

"In the list of discharges, eight males and two females are recorded as not insane. Five of these were drunkards; one was a case of eccentricity, with strong mischievous and vicious propensities; two were cases in which insanity had been successfully pleaded in defence against criminal charges; and two were imbeciles."

As parts of the scheme of moral treatment, we learn from the report that "a large number of entertainments, theatrical and social concerts, lectures, and addresses have been given during the year. The anniversary of the opening of the institution and the national anniversaries were celebrated in the usual manner. All of these have been under the entire management of the patients themselves, who, in the necessary preparation, have exhibited a great deal of ingenuity, taste, and talent. Several very fine pieces of scenery have been painted by an artist recently returned to his friends; and to the same gentleman we are indebted for a new drop-scene for the stage, and a large number of portraits and sketches for the decoration of the halls. The music for all our entertainments has, as usual, been furnished by the 'Asylum Band.'"

Patients admitted from January 16th, 1843, to December 1st, 1857	5065
Discharged cured	2112
Died	605
Not insane	34

In conformity with a legislative act, the insane convicts of the State were removed to this asylum during a period of eight years, terminating in 1854.

The number thus transferred was 67. Fourteen of them, according to the report, were feigning insanity. Of the remaining 53, the form of disease was: Acute mania, 1; chronic mania, 5; periodic mania, 1; paroxysmal mania, 1; melancholia, 1; dementia, 41; general paralysis, 2; imbecility, 1.

The case of melancholia, that of periodic mania, and three of the cases of dementia, recovered.

"It is a significant fact," remarks Dr. Gray, "that, for the period of eight years, but one case of acute mania was sent from our State prisons. These statistics show that the form of mental disease most likely to occur among this class is dementia. We have here forty-one cases of this form in fifty-three cases of insanity! Their individual history shows further, that in nearly all, the process of sinking into dementia was gradual, and not the sequence of neglected or violent mania, a fact confirmed by my personal visits to the prisons, and information given me by their officers. Few convicts become insane from the operation of moral causes."

Of the fourteen cases of simulated insanity, mania was feigned in three, and dementia in eleven.

Aside from these convicts, eighty-six persons have been sent to the asylum by order of judges and justices, as "criminal and dangerous lunatics." It was found that twelve of them feigned insanity, two others were not insane, and four were imbeciles. "Of the twelve feigning insanity, ten simulated dementia, and two mania."

Of the 68 who were really insane, the form of disease was, acute mania in 12; subacute mania, 3; chronic mania, 14; periodic mania, 3; paroxysmal mania, 4; puerperal mania, 1; dementia, 26; mania, with epilepsy, 2; dementia, with epilepsy, 2; general paralysis, 1. Twenty-one of these have been discharged recovered, and ten have died.

"Among the crimes recorded as committed are 22 murders and 14 arsons. Of the former, 10 were committed by persons labouring under dementia, 2 by demented epileptics, 2 had acute mania, 1 subacute, 4 chronic mania, 1 was an imbecile, and 2 feigned insanity as a means of escape. Nineteen were males, and three females.

"Of the 14 acts of incendiarism, 4 were by persons labouring under dementia, 2 by epileptics, 1 by an imbecile, 2 by cases of acute, 2 of chronic, and 1 of puerperal mania, and 2 by persons not insane. Eleven of these were males and three females."

In July, 1857, the buildings of the asylum suffered serious detriment from two conflagrations. Upon the 14th, the large central building of the front edifice was entirely destroyed (the outer walls alone being left standing), together with about ninety feet of the roof and a portion of the attic of the wing occupied by the female patients. No patient was either destroyed or injured; but Dr. Lauren F. Rose and Mr. William Cessford, a fireman, both resident in Utica, were killed. "Both fell in the heroic discharge of duty. The latter was completely buried in the ruins of the falling roof; and when his remains were found, the charred hands still clutched the vessels with which he was labouring to control the fire."

Upon the afternoon of the 18th, the barn, a stone building 100 feet long and 47 feet wide, was also destroyed, with the exception of the outer walls.

These disastrous fires were the work of an incendiary—a man who had formerly been a patient in the asylum, but who was discharged in February, 1856, and during most of the subsequent period had been an employee, "working the greater part of the time in the dining-room and in the printing office. He was also employed as a nurse." "The fire in the barn was kindled in the loft, and that in the asylum was kindled in the large foul-air flue leading from the north wings, where it passed through the main attic, over the ceiling of the chapel, to the cupola. There was a door entrance to the flue, through which he passed and set fire to a temporary wooden box within, which was intended to connect the ventilation of the chapel with that flue."

The managers of the asylum accord great credit to Dr. Gray and his assistant physicians, for their energy, prudence, and good management, under the trying circumstances of their position, during the conflagration of the 14th.

Measures were immediately taken for the reconstruction of the central edifice, and at the time the report was written, it was far advanced towards completion.

2. The general results for the year 1857, at the New York City Lunatic Asylum, are indicated by the subjoined numbers.

	Men.	Women.	Total.
Patients on the 1st of January	252	345	597
Admitted in course of the year	130	196	326
Whole number "	382	541	923
Discharged, including deaths	131	165	296
Remaining on the 31st of December . .	251	376	627
Of the patients discharged, there were cured			152
Died			75

The diseases in two of the cases cured was delirium tremens. Six cases discharged "unimproved" were "improper subjects."

Causes of death.—Consumption, 25; paralysie générale, 7; chronic diarrhœa, 6; typhomania, 6; submersion, 4; senectus, 4; epilepsy, 3; paralysis, 3; inflammation of the brain, 3; congestion of the brain, 2; inflammation of the lungs, 2; disease of the heart, 2; hemiplegia, 2; apoplexy, 1; hæmoptysis, 1; peritonitis, 1; albuminuria, 1; dropsy, 1; dysentery, 1.

A large part of Dr. Ranney's report is occupied by a description of the disciplinary and moral regimen pursued in the asylum. His general scheme is nearly identical with that which prevails at all other well-regulated institutions of the kind; and as this must be pretty well understood by our readers, it is unnecessary, in this place, to enter at large upon the subject. We quote some of the remarks upon seclusion and mechanical restraint.

"Our rule is, never to punish a patient. If one be violent or noisy, he is shut in a room, with a distinct understanding that others shall not be annoyed; and soon, if promises be given of better conduct, he is again allowed the liberty of the hall; which course is repeated as occasion may require. During the past year, with an average of 618 patients, not more than four daily have been confined in their rooms.

"Our apparatus for restraint consists of the camisole, muff, common restraining (belt and wrist?) strap, and bed strap. Of these, the first two are most frequently used, principally to prevent females from removing their clothing; the restraining strap most rarely, that the patient may be unable to injure himself or others; while to obtain the quietude necessary for sleep, the bed strap forms the only mode of restraint. This embraces all and every means of restraint; and the daily average of any application of this kind does not exceed one, among two hundred inmates."

When reviewing the last report from the Eastern Kentucky Lunatic Asylum, we made some remarks upon the ability of the insane to control their erratic and wayward tendencies and impulses, under the stimulus of a sufficient motive or other inducement. The following extract both confirms and illustrates the truth of the position which was there assumed:—

"There are certain inducements held out to the insane, to which it may be proper to refer; the number being small who are unable in some degree to exercise self-control over their ordinary acts. A patient is told that if his conduct be good, he will have associates of a like character, and certain privileges not otherwise allowed, besides giving great weight in his favour in the final decision of his condition of mind. The following illustrates this principle:—

"Some months since, a young man was admitted who for weeks had disturbed by night his neighbourhood with loud prayers. He frankly confessed the truth, and stated that the same course would be pursued, as he had committed a sin of great enormity. Secret prayer was suggested, but the proposition was declined. He was then informed that there were two classes of inmates—the one, quiet, the other, noisy; and should he persist in his resolution, he would be placed among the last named, that the sick and quiet might be undisturbed. On deliberate reflection, he concluded to make the trial, and for one night to remain with the quiet. The following formal compact was finally adopted:—

"1st. That he should not disturb the house for one night, and that one day's notice of a change of intention should be given the physician.

"2d. That the physician accord to him the privilege of remaining in the best part of the house, until the notice be received, and also permission to make daily a short exhortation.

"The result was, that no notice was ever given on his part; he became quiet at night; the daily exhortation continued a few weeks, then was wholly omitted; and he is now perfectly well."

The report contains the programme of the last Christmas entertainment for the patients. It consists of three parts. Part First includes an overture by the band and five songs, between the second and third of which, "*Santa Claus makes his entreé with presents.*" Part Second consists of a pantomime in seven scenes; and Part Third, of an overture, five songs, dancing, and a fairy dance as the "Grand Finale." Beside Christmas, four other days are annually observed as holidays, upon which entertainments are given.

Of the 258 patients admitted in the course of the year, 157 were natives of Ireland, 55 of Germany, 14 of England, 11 of Scotland, and 21 of twelve other foreign countries and their dependencies. Only 68 were natives of the United States; and of these, but 40 were born in the State of New York.

The establishment has been vastly improved within the past year, by the construction of a separate building for kitchen, laundry, the heating of all the water for the halls, and the generation of steam, which has been substituted for furnaces, grates, and stoves, in warming the apartments of the asylum.

3. The summing up of the records for 1857, at the New Jersey State Lunatic Asylum, furnishes the following results:—

	Men.	Women.	Total.
Patients on the 31st of December, 1856 .	124	139	263
Admitted in course of the year . . .	75	91	166
Whole number " " . . .	199	230	429
Discharged, including deaths . . .	64	86	150
Remaining December 31st, 1857 . . .	135	144	279
Of patients discharged, there were cured .	26	30	56
Died	11	13	24

Causes of death.—General exhaustion of the system from chronic disease, 13; exhaustion from acute mania, 3; congestion of the lungs, 2; suffocation by food lodged in the trachea of a paralytic, 1; consumption, 1; softening of the brain, 1.

The larger part of Dr. Buttolph's report consists of "Remarks on the Nature, Causes, Means of Preventing, and General Principles of Treating Insanity." We shall select from this such portions as appear to us most worthy of the attention of our readers.

"A degree of confusion often arises in regard to the true nature of insanity from the language of statutory or legal definitions, which have been made and interpreted to embrace only or mainly those cases of mental disorder in which the intellectual faculties are specially at fault. In this way, the whole class of cases of mental disorders in which disturbed and deranged feeling is the leading symptom, and popularly, though inaccurately, called 'moral insanity,' is brought into disrepute, or wholly ignored by courts and jurists.

"In estimating the responsibility of an individual whose character and conduct have been changed by disease of the brain, no difference is made by practical observers and writers on account of the locality of the disease in that organ, or of the class of faculties, whether intellectual or affective, that are most involved. While the daily and hourly experience of medical men connected with the care of the insane shows that the moral freedom, and therefore the responsibility of individuals, is as effectually and entirely abridged or suspended in these cases as if the intellect was deluded or most disturbed, no amount of authority from musty codes, of special pleading, or sarcastic ridicule from any quarter, can change the simple facts, and legislators, courts, and communities should become accustomed to admit their existence, and thus lessen the danger of judicial murders, or the infliction of penalties upon insane and irresponsible victims.

"Of the mental and moral causes that predispose to mental disorder, none exert a greater influence for evil than the imperfect development and training of the different classes and individual faculties. These are constituted to be mutually dependent upon each other in working out the great problem of life. If the intellectual, the moral, or the animal group of faculties, or any individual belonging to either, is neglected in the educational training, or is cultivated too highly, or at the expense of the rest, the equilibrium of the mind is destroyed, and the individual thus rendered liable to be affected unduly by the exciting, depressing, or otherwise disturbing influences of life. Many, indeed most of the systems, or rather plans of educational training in vogue are defective in this respect, that they do not embrace a correct and comprehensive view of the constitution and wants of the mind. In the first place, educators too often practically ignore the fact that mind, in this life, is directly dependent for its vigorous and healthy action upon the perfect development and healthy state of the brain, as its proper and only physical medium of manifestation. The consequence is, that efforts at mental culture are frequently made without reference to the plainest laws of health, and hence frequently result in the failure of the health, happiness, and usefulness of the victim.

"Again, attempts are made to educate the mental faculties without sufficient reference to the wants of the animal feelings and higher sentiments of the mind; in many cases also, where one or other of these classes are relatively very strong or weak, and require the most careful and enlightened attention on the part of the educator to secure a harmonious balance in the different mental forces.

"In harmony with the views here presented, we regard attention to all those means calculated to aid the full development of the brain, and establish the proper activity and strength of the faculties, as the most efficient and reliable means for preventing insanity.

"We would have the system of education adopted include such general instructions in regard to man's physical system as to enable him to conform in practice to the laws of his being. * * * * The next step is to acquire a knowledge of the nature, number, and office, separate and combined, of the faculties of the mind; this being alike indispensable to self-government and to a correct and consistent view of man's true relation to all external objects and beings. When this knowledge is attained, he is prepared to receive such impressions in regard to the relations, legitimate aims, and ends of life, as will enable him to meet and bear the trials incident thereto with Christian fortitude and patience. Instead of repining and withering under what appears to the ignorant and undisciplined as mysterious dispensations of Providence, he sees only the movements of a comprehensive system of changes and events designed by a master-mind too wise to err and too good to be unkind.

"The tranquillity of a mind thus enlightened and submissive, in regard to the current events of life, can scarcely be disturbed by petty annoyance or overcome by serious calamity; as, by aid of its ruling principle, or 'philosopher's stone,' the unmanly and unchristian term 'trouble' is changed to *business*, and the external world about him, often regarded and called a gloomy 'vale of tears,' from which he is to pray for a safe, if not early exit, becomes what the Creator intended it should be—a bright and beautiful sphere where all his powers, inspired by hope, shall be developed and tried, and thus prepared for entering upon a future state of unlimited growth and of unmixed felicity."

4. The Forty-first Annual Report of the Friends' Asylum, at Philadelphia, Pa., contains the following record of the movements of the patients at that institution during the fiscal year terminating with the close of February, 1858.

	Men.	Women.	Total.
Patients in the asylum March 1st, 1857	29	29	58
Admitted in the course of the year	18	23	41
Whole number " "	47	52	99
Discharged, including deaths	18	19	37
Remaining Feb. 28th, 1858	29	33	62
Of those discharged, there were cured	9	10	19
Died	5	2	7

Died from the exhaustion of acute mania, 4; effusion at the base of the brain, 1; chronic meningitis, 1; phthisis pulmonalis, 1.

"One had been in the asylum three days; one eight days; two about one month; one about four months; one two years; and one thirty-one years on his last admission."

Dr. Worthington thus expresses his views of the effect of insanity upon the general health and longevity of persons attacked by it.

"There can be no doubt that insanity, in many cases, is complicated with physical disorders which tend to shorten life. In a considerable number of cases, even where it is not complicated with any appreciable structural disease, the patients sink, in periods varying from ten to thirty days, from exhaustion produced by intense excitement and the almost absolute want of sleep. In cases of this kind, the individual has generally experienced some severe shock to his nervous system or been suffering under some prolonged weight of mental distress, which appears completely to have broken down his recuperative energies. But after the acute stage has passed without reason being restored, and patients have settled into a state of chronic insanity, the physical health generally becomes re-established; and then, if placed under circumstances favourable to its continuance, the insane have, perhaps, as fair a prospect of long life as persons in the possession of all their faculties. In an institution where all their wants and comforts are properly attended to, without care or thought on their part, they may indeed be considered as less subject to the various causes of acute disease than the world at large, and probably enjoy quite as good physical health.

"These remarks are fully exemplified by the comparative condition of the two classes of patients in the asylum, almost the whole of the severe cases of illness that occur being furnished by patients recently admitted; while the more permanent residents of the asylum seldom require the use of medicine. Among this class of patients, during the past year, the usual general good health has prevailed, only one death having occurred—a man more than eighty years of age, who had spent nearly half his life in the institution."

It appears to us that these views are very accurate as derived from observation of the disease at the institution whence this report emanates. A writer whose experience had been gained in some of the other American hospitals, could hardly have failed to add to the above that the chronic insane yield more easily than the average of persons enjoying mental health to the influence of the more violent of epidemic diseases. Attacks are relatively more numerous, and the mortality is greater. Those patients are deficient in the self-preservative power, the nervous energy, the *vis vitæ* which effectually prevents an attack by the epidemic agent, or obtains the victory over it if an attack has been made.

The institution under the care of Dr. Worthington presents perhaps the maximum of conditions promotive of general health and longevity. It does not receive paupers. Its patients have never suffered, previously to admission, from a deficiency of wholesome food. In very few of them has the constitution been shattered or weakened by intemperance. The hygienic condition of the asylum has always been good. The number of cubic feet inclosed by its walls is large in proportion to the number of patients. Its inmates have probably never had the opportunity of attacks from diseases resulting from deficiency in the quantity of food, or inferiority in its quality, or from prolonged humidity or impurity of air. Scorbutus, we apprehend, was never seen within its walls, and erysipelas, as well as fevers of the typhoid type, very rarely. If we are not mistaken, no severe epidemic has ever visited it, to try the resistant vitality of its chronic patients, and to decimate their number. For these, and for still other reasons, among the deaths in chronic cases at this institution there has been, for many years, and doubtless there will still continue to be, a comparatively large number in which the patients have attained a very advanced age.

	Men.	Women.	Total.
Patients admitted since the asylum was opened	699	663	1362
Discharged, cured	324	291	623
Died	97	91	188
From 20 to 30 years of age when admitted	218	187	405
" 30 " 40 " "	107	135	242
Of 572 patients received since 1842, there were between 20 and 30 years of age when first attacked	107	89	196
Between 30 and 40 years of age . .	54	55	109

The subjoined extract is from the remarks upon the treatment of the insane. "Uniform *kindness* and *candour* in all our intercourse with them cannot too frequently be urged upon all concerned in their management, either within or without the walls of an asylum. One reason, perhaps, why deception is so often sought to be practised upon them is that they are supposed to be incapable of distinguishing between truth and fiction, and individuals are thus led, sometimes with good intentions, to practise what they suppose to be harmless deception, which they imagine the subject of it will never discover. While the insane are peculiarly sensitive to any want of respect towards themselves, and are frequently remarkably acute in penetrating the motives of others, they are easily won by real kindness and sincerity, which they quickly perceive can have no object but their own benefit. It is only by this kind of treatment that their confidence and respect can be secured, while deception is almost sure to be discovered, and visited by resentment and dislike."

Dr. Worthington, having recently had an opportunity of observing the management of the insane in some of the European countries, makes the following remarks upon the subject of corporeal restraint:—

"In most of the institutions visited in England, including several of the larger asylums, the mildest system of restraint seemed to be employed—carried to the extent of the entire disuse of all forms of instrumental restraint. This may, indeed, be said to be general in all the county asylums in England; and whatever we may think of the advantage of the 'non-restraint system,' its possibility is no longer doubtful. It was certainly interesting to witness, at Hanwell, with its 1200 patients, the practical working of the system; and while we may applaud the spirit of improvement and genuine philanthropy that led to its introduction there, and may be willing to admit that the nearer we approach to it in the general management of the insane the more is their condition elevated and improved, we may yet well doubt the wisdom of absolutely rejecting, under all circumstances, a remedy that might, by any possibility, be found useful." P. E.

ART. XX.—*A Treatise on the Practice of Medicine.* By GEORGE B. WOOD, M. D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania, etc. etc. 2 vols. 8vo. Fifth edition. Pp. 888–904. J. B. Lippincott & Co.: Philadelphia, 1858.

THE demand for five editions of the work of Dr. Wood, within the comparatively short space of eleven years, is sufficient evidence of the correct appreciation by American physicians of the professional productions of their own countrymen, when of a character similar to that of the treatise before us.

Comprehensive, clear, and exact in all its teachings, and presenting in its successive editions a fair and full exposition of our knowledge in reference to the pathology and therapeutics of the various diseases of which it treats—comprising all such as are liable to fall under the notice of the practitioners located in different portions of the United States—we know of no systematic treatise on the practice of medicine, in the widest signification of the term as now understood, which is better adapted as a work of reference to the physician actively engaged in the engrossing duties of his profession, or through the pages of which, the advanced student will be presented with better delineated and more truthful pictures of diseases, or sounder and more explicit practical directions for their management. D. F. C.

Art. XXI.—*Guy's Hospital Reports.* Edited by Samuel Wilks, M. D., and Alfred Poland. Third Series, Vol. III. London, 1857. 8vo. pp. 513.

The first volume of *Guy's Hospital Reports* was edited by George H Barlow and James P. Babington, in 1836. Impressed with the importance of recorded experience in the advancement of medical knowledge, they determined to contribute to the general stock a collection of facts drawn from the largest repository of disease in London. They supposed, also, that it was incumbent upon them, and upon all who have enlarged opportunities of witnessing disease and its treatment, to collect and record their observations, that they may be preserved from oblivion and transferred to the common stock of knowledge. A volume of great value has appeared almost every year since the publication was commenced.

Guy's Hospital is the largest in London; it contains within its wards a constant succession of above five hundred patients; thus amounting in the year to between three and four thousand. These patients are not admitted at the recommendation of managers, but they are selected by the attending physicians and surgeons as those whose diseases are the worst and most acute, or the most interesting and instructive, amongst a concourse of patients who present themselves upon the regular days of admission. The out-patients prescribed for are no less than fifty thousand. The annual number of accidents admitted amounts to nearly six hundred. Records of all the cases admitted are kept by the senior students, who form a Clinical Society, of which some notice was given in the July number of this journal for 1844. With such material to be disposed of, with editors of ability and industry, *Guy's Hospital Reports* must be looked upon as among the most valuable contributions to our general stock of experience.

This volume contains twenty original communications, eleven wood-cuts, and nine lithographic plates. The following is an analysis of its contents:—

I. *A Report of Seventy-two Cases of Tetanus occurring in Guy's Hospital since the year* 1825. By Alfred Poland.

In the introduction to the first volume of the second series of *Guy's Hospital Reports*, the editors state that they purpose, in the new series, to illustrate the different classes of disease by the aid of series of *reports* collected within the walls of the hospital, and furnished by the books of the Clinical Society. Previously to that time their chief energies had been expended in giving to the medical world, in finished treatises, the inferences they deduced themselves from the observations collected. The very first report they published, which was upon the cases of hernia, was by the author of the one we are about to examine.

This paper of Mr. Poland's occupies eighty-eight pages. He commences by stating concisely *all* the cases which have occurred, which it is important to bear in mind, as recorded cases, generally, are those only having a successful issue. They are arranged as they occurred in the several years, giving the sex, age, constitution, habits, previous ailments or injuries; the supposed cause and period of accession thereafter; the date and state of the weather at the time of the seizure; the state of the winds on the day and two preceding days of the attack; the temperature at and before the date; the state of the wound at the time; any peculiarity in the symptoms; the treatment; the duration; the results; and mode of dying; and, lastly, the post-mortem appearances. They are then analyzed and reviewed in the following order:—

1. The frequency of the disease.
    1. In reference to hospital admissions.
    2. In reference to hospital deaths.
2. The sex.
3. The age.
4. The constitution, diathesis, regimen, and habits.
    - (2–4) Condition of body.
5. Season of the year, climate, &c.; condition of atmosphere.
    - (2–5) Predisposing causes.
6. Form of the disease.
    1. *Idiopathic.* Exposure.
    2. *Traumatic.*
        1. Acute.
        2. Subacute.
        3. Chronic.
    - Exciting cause.
7. Interval between probable cause and first appearance of symptoms.
8. The state of the wound at time of occurrence of symptoms.
9. The peculiarity of the symptoms.
    1. Premonitory.
    2. Specific.
    3. Decline.
10. Duration of the disease; ratio of recovery and mortality; the mode of dying; and prognosis.
11. The morbid appearances.
12. The treatment adopted.
    1. Local.
    2. Constitutional.

In addition, the important points of his own cases are compared by Mr. Poland with those of the cases recorded by Dr. Lawrie, from the Glasgow Infirmary, and those of Mr. Peat and Dr. Morehead, from the Sir Jamsetjee Jejeeboy Hospital, at Bombay.

Section I. *The Frequency of the Disease.*—In 32 full years there occurred 72 cases of tetanus, in Guy's Hospital, in 113,020 total admissions, making an average of .0063 per cent.; and there were 62 deaths from tetanus in 11,052 total deaths, or .056 per cent. Of these, all but three had a coexisting or previous lesion of surface, they were called traumatic, and hence might be ranked and included under the surgical class of cases. Thus there will be 69 cases of tetanus with lesion of surface to 64,368 cases admitted with external lesion and surgical disease, being .0107 per cent.; and 61 deaths from tetanus to 4,218 cases of death from external lesion and surgical disease, being 1.444 per cent. In the Bombay Hospital, from 1848 to 1853, 0.8 per cent. of the total admissions were of tetanus, and 3.9 per cent. of the total deaths. Dr. Leith, Registrar of Deaths at Bombay, returns 1,716 deaths from tetanus during the same six years, and states the percentage to be 2.5 on total deaths from all causes. In London, in six years, in 345, 132 total deaths, 110 of tetanus, or .0031 per cent. In England, in the same space of time, the total deaths are 2,431,602, and 759 are of tetanus, being .0031 per cent.

In these calculations we have given the percentage as we find it in the report. Some of them will be observed to be incorrect, being just ten times too low; .0063, .056, and .0107, should be respectively .063, .56, and .107; .0031, in both instances, should be .031. In fact, the only correct calculation made is that giving 1,444 as the percentage, when, out of 4,218 cases of death, 61 are from tetanus. Such errors are very annoying, and should be carefully avoided, as they can be readily passed over unperceived. All these percentages are cited as if correct in the review given of this report in the last number of the *British and Foreign Medico-Chirurgical Review* (April, 1858); and as the numbers from which they are calculated are not given, the reader is, therefore, not furnished the data for detecting the error.

For the purpose of comparison, we have calculated from the few tables we have at hand the number of cases of tetanus that have occurred in several places in the United States. In 1854, in New York City, the number was 49, of which 35 were males and 14 females. The total deaths during the same year being 28,568, we have 1 death from tetanus in 583, or .17 per cent. In 1857, in Philadelphia, there were 13 deaths in a total of 10,895, or one case in 838, which gives .12 per cent. From the tables of Dr. Emerson, published in this journal in the years 1827, 1831, and 1848, we have that from the 1st January, 1807, to the 1st January, 1827, in a total of 53,004 deaths in Philadelphia, 125 were from tetanus, giving .236 per cent.; from 1st January, 1827, to the 1st January, 1830, there were 29 cases in 16,579 deaths, giving .175 per cent.; from 1830 to 1840 there were 51 cases in 49,686, giving .103 per cent. From these data the disease would appear to be becoming less common in this city. In Massachusetts, as we learn from the last report made to the commonwealth, in five years the total number of deaths from all causes was 104,873; of these, 55 were from tetanus, or 1 in 1,907, which gives .05 per cent. These data are sufficient to show that tetanus is much more common in this country, even in the more northern portions, than in England. In Charleston, S. C., in 1856, in 1,428 total deaths, 57 were from trismus nascentium, and 6 from tetanus, giving for tetanus alone a percentage of .42, and for both diseases 4.42.

Section II. *The Occurrence of Tetanus in the Two Sexes.*—Of the 72 cases in Guy's Hospital, 12 were females and 60 were males; the ratio, therefore, between the two sexes is 1 : 5. In Glasgow there were 10 females to 42 males, a ratio of 1 to 4⅕. From the report of the registrar-general of England, it appears that in London, from 1843 to 1854, the proportion of males to females dying of tetanus was 156 to 72, being 2⅙ : 1. In England, from 1847 to 1854, 734 to 370, being nearly 2 : 1. If those cases where death occurred under five years of age be excluded, we have, in London, from 1843 to 1854, 124 males to 45 females, being about 2¾ : 1.

Section III. *Tables of the Ages in which Tetanus occurred.*—In Guy's Hospital, about 40.27 per cent. were between 10 and 30 years of age; in Glasgow, about 55.1 per cent., and in London, from 1843 to 1854, omitting those under 5 years, 36.09 per cent.

Section IV. *Constitution, Diathesis, Condition of Body, Habits, and Previous Health.*—The constitution and diathesis are recorded in only fifteen cases; but, according to them, the very quiet and cheerful, the very irritable and excitable, the strumous and fair, and the very strong, are equally liable to the disease, and it is in all equally fatal.

The condition of body is noticed in 46 cases. Separating these into classes, the healthy, muscular, and fine-made, and the robust and well-developed give 5 recoveries and 30 deaths; whereas, of the unhealthy, spare, and emaciated, none recovered, all of them, 11 in number, died. The habits are mentioned in 16 cases; the dissipated and intemperate have an equal ratio with the temperate, 2 recoveries to 5 deaths. Judging from the statistics from Bombay, it appears that Europeans, whether in their own country or in India, are peculiarly exempt from the disease, whilst natives of warm climates are greatly susceptible.

In our Southern States tetanus seems to be much more frequent among the blacks than the whites; in Charleston, for example, from April, 1857, to April, 1858, there were 8 deaths from trismus and 2 from tetanus among the whites, and 37 from trismus and 8 from tetanus among the blacks, while in the total deaths there are but about one-third more of the latter than of the former.

Previous diseases, injuries, complications, &c., have been noticed in only 12 out of the 72 cases. In two of these twelve cases, the patients were subject to epilepsy; in two of them, children nine and ten years of age respectively, there were intestinal worms, in one lumbricoides, in the other ascarides; in three of them, the patients were subject to rheumatism. Tetanus is very often ushered in by symptoms of rheumatism, and the question as to how far the two are allied has not yet been sufficiently discussed.

Section V. *Season of the Year, and Climate, &c.*—An analysis of the cases is given according to the months in which they occurred; the temperature is added, the state of the weather, and the direction of the wind the day of the attack, and for the two or three days that preceded. Those cases which occurred previous to admission are separated from those in which the disease took place afterwards, when it is to be presumed that they would be little liable to wet, exposure, and sudden change of temperature.

Of the 72 cases, 41 were admitted with the disease, and in 31 it supervened after admission. Of the 41 cases admitted with tetanus, 14, or 34.14 per cent. can be distinctly traced and associated with exposure and sudden change of temperature; as to the other 27 cases, there is no evidence recorded one way or the other. Of the 31 in which it supervened after admission, in 3 there was direct evidence of exposure to draught and cold previous to the attack. The table shows that there was a greater amount of tetanus during the westerly winds; which, it must be recollected, however, prevail in England. Larrey states that tetanus is most frequently met with during N. N. W. winds. As to the season of the year, the list from Guy's Hospital and Dr. Morehead's Bombay returns give the highest ratio in the summer months; the Glasgow in the temperate months, and the published cases and Mr. Peat's Bombay returns in the cold months. This discrepancy, at least, will not lead us to place too much confidence in special returns. In regard to the influence of the season on the recovery from tetanus, an equal discrepancy exists.

Mr. Poland gives, in addition, some interesting records on the occurrence of tetanus after naval and military engagements, drawn chiefly from the accounts of Baron Larrey, which contain facts bearing strongly in favor of atmospheric influence as the real point of causation.

Section VI. *Form of the Disease, including the supposed Exciting Cause.*—In Guy's Hospital, 3 of the cases were idiopathic, being 4.16 per cent.; in Glasgow the percentage was 3.84, and at Bombay 38.46. The severity of the symptoms bore no relation to the degree of local injury. In 86.56 per cent. tetanus occurred after wounds of the extremities. As to the relative frequency of tetanus in injuries and surgical diseases, the returns are too incomplete to give any satisfactory deduction.

Section VII. *Interval between Injury and Symptoms*:—

	Previous to the 10th day.
Guy's	31 cases in 63 or 49.2 per cent.
Glasgow	30 “ 48 “ 62.5 “ “
Bombay	18 “ 28 “ 64.29 “ “
Published cases	69 “ 166 “ 41.56 “ “

	From 10th to 22d, inclusive.	Above 22 days.
Guy's	26 cases in 63 or 41.26 per cent.	6 cases or 9.52 per cent.
Glasgow	18 “ 48 “ 37.5 “ “	no cases.
Bombay	8 “ 28 “ 28.57 “ “	3 cases or 10.71 “ “
Published cases	82 “ 166 “ 49.39 “ “	15 “ 9.03 “ “

Other tables are given, which show that the interval preceding the attack does not determine the form of the disease, that is, that the disease is sometimes of the severest and most rapid description where an interval of ten days has elapsed. On the other hand, when the disease follows close upon the injury, it is for the most part uncontrollably rapid and fatal.

Section VIII. *State of the Wound at the time when Tetanus sets in.*—In 1 case it was quite recent; in 16, inflamed or suppurating; in 19, unhealthy, sloughing, and gangrenous; in 14, scabbed over, healing, nearly healed, and healthy; and in 7 healed, or said to be healed. Of the 7 cases, however, in which it is said to be healed, Mr. Poland adds afterwards, that there was only one case wherein it was observed that the wound was actually healed at the time of the occurrence of the tetanus.

Section IX. *Peculiarity of the Symptoms.*—Notice is made of premonitory symptoms in only 4 cases; in two there were darting pains from the wound up the arm, before the attack; in the others, great pain in the wound, and in one of them great pain in the back also. In 4 cases there was a remission of the symptoms; in one for 2 days only, in another for many days, and in two for 13 days. As respects the mode of dying, 19 died during a paroxysm with spasm and convulsions; 13 from asphyxia and suffocation, and 10 from exhaustion.

In one case, the heart's action continued for some time after the patient had ceased to breathe.

Section X. *Duration of the Disease in the Fatal Cases.*—Of the 62 cases which terminated fatally, 32, or 51.62 per cent., died before the end of the 5th day. There is a statement generally quoted in medical works, to be found, if we are not mistaken, in the writings of Hippocrates, that if tetanus continue over a period of twenty-two days, recovery is certain. Two of the cases at Guy's were fatal over this period, one on the 28th, the other on the 32d day. It is curious to notice also that ten died on the 7th and eleven on the 4th day, while on no other day did more than five die, and then it was on the 3d and the 6th, or the days immediately preceding them. A table is given which shows that there are no grounds for the supposition that the season of the year has any influence on the short duration or protraction of the disease.

Section XI. *Post-mortem Appearances.*—Of the 62 deaths, 18 were not examined, and of the remaining 44, in only 34 were the inspections recorded. The brain was examined in 20 cases; in 11 it was healthy, healthy and firm, with nothing remarkable, with nothing morbid in colour or consistence; in 9, it was congested, darker than natural, dark and flabby, pinkish with ulcerations on under surface of the anterior lobes, and decomposed. The spinal cord was examined in 19 cases; in a few, it was redder than natural, congested, and softened, but in the greater number there was nothing abnormal. The condition of the nerves at the seat of the wound was marked in 14 cases; in five they were inflamed. The heart was violently contracted in only one case; and in this, the patient died on the second day from suffocation, after laryngotomy had been performed for his relief. In 28 cases in which the condition of the lungs is given, in 7 they were congested, in 3 pneumonic, and in 4 apoplectic. The larynx, in one case, in which the patient died in a paroxysm, was found closed by the epiglottidean folds being caught in the rima. In the condition of the other organs of the body, there does not appear to be anything of importance to be noticed.

Section XII. *The Treatment adopted.*—No benefit was experienced from the local measures, which consisted in laying freely open the wound, in amputation, in division of the nerves near the seat of the wound, in baths, and in applications of every description to the wound, the spine, the neck, spine and abdomen, and to the region of the diaphragm. The extraction of a tooth, in order to administer food, in one case, was followed by immediate death. In the constitutional treatment of the cases, those medicines which support the system, and which would render the patient more able to fight against the exhausting disease, seem to have been most efficacious. At all events, in the 10 cases of recovery quinine was given in 7, and in the others wine, musk, and tonics. Of the 25 cases in which quinine was given, 7 recovered; the doses were about one grain per hour, given every third or fourth hour. Cannabis indica and chloroform, remedies which are in vogue in the treatment of tetanus in this country, were of no service; in most of the cases in which chloroform was given, the disease was aggravated.

II. *On Purpura and its Connection with Splenic Disease.* By S. O. HABERSHON, M. D.

After some short prefatory remarks upon the varieties of purpura, the symptoms of the disease, the pathological conditions found in the fatal cases as they are generally given by authors, its causes and its treatment, Dr. Habershon gives a history of fourteen cases which occurred under his own observation. Five of these were cases of purpura hemorrhagia, and three of these proved fatal.

At the *post-mortem* examination made in the three fatal cases, the spleen was found to be diseased, and "it was the only structure presenting evidence of disease which could not be looked upon as the effect rather than the cause." The enlarged gland was of a dull red colour, and studded throughout with pale yellow spots, from one to three lines in diameter; they were connected with the capillary circulation, and consisted of cells, nuclei, and granules. The appearance of the organ is thus described in the first case, where the affection was most marked.

"The spleen was pale, soft, of a dull red colour, and contained very numerous light-coloured masses, about the size of peas, throughout the whole of its substance. These pea-shaped masses, on microscopic examination, were found to be connected with the splenic capillaries, a larger capillary vessel being observed to be connected with one side of the mass, and on the other were several smaller vessels, but it could not be ascertained whether these ramified over or passed through the structure. The rounded mass consisted of granules and cells; several of them were irregularly aggregated together so as to constitute the pea-shaped mass before mentioned; splenic cells were observed of various sizes generally about the size of white corpuscles of the blood, some contained a distinct nucleus, others granular matter."

It would seem to be the fashion at the present day to locate the cause of any unknown disease in one or the other of the ductless glands. As nothing is known about their uses in the economy, there is nothing to check the fancy, in regard to the effects of changes they may be found to undergo. Dr. Habershon considers the case just mentioned to confirm the idea that "the function of the spleen is in close connection with the metamorphic condition of the blood," and also that "acute changes in the Malpighian bodies *is* one of the causes of purpura hemorrhagica." To prove either of these propositions would require some reasoning in a circle.

Nevertheless it does seem most probable that the primary cause of purpura is not the condition of the blood itself. In this disease, relapses not unfrequently occur after all external signs of the affection have disappeared, and, as Barthez and Rilliet remark, the long duration of the disease in many cases presupposes that the total mass of the blood has been several times removed. (*Mal. des Enfans*, tom. ii. p. 328.) If, therefore, the blood continues to be extravasated, it is logical to place the seat of the disease, not in the blood itself, but either in the capillary vessels that preside over its transudation, or in the agents that preside over its formation. The spleen may be one of these agents, and therefore it may be concerned in producing what may be the cause of purpura.

Some things were said in the interest of medical literature, in the *British and Foreign Medico-Chirurgical Review* for April, 1858, in a review of Dr. Habershon's work on "Diseases of the Alimentary Canal," which he would do well to hearken to. "We do not expect a medical writer to wield the pen of a Macaulay in detailing the history of disease, but we do require accuracy of expression, and some adherence to grammatical rules."

III. *Anatomical Description of a Double Fœtus.* By S. O. Habershon, M. D.

The monster consisted of two female fœtuses, of about seven and a half months, of the character described by St. Hilaire as synotus. The description given of the external appearance of the monster is very minute, as is also that of the internal arrangement of the organs, which were carefully dissected. Two plates, containing five figures, are added to assist this description. The only fault to be found with the paper is the name *synotus*, for the monster had four separate and distinct ears. There was a single head; the face on one side was perfect, but on the other there was a single eye, a small flattened nose, rudimentary lips, and external ears situated low down. It would be more correct, therefore, following the classification of St. Hilaire, to place the monster between the janiceps and the iniops, which, with the synotes, form the three groups of the family sycephalus. There are fewer examples of the group to which this monster belongs than of the others.

IV. *Select Surgical Cases.* By J. Cooper Forster.

Three of these cases are of tracheotomy for the removal of foreign bodies from the air-passages. In performing this operation, Mr. Forster recommends not waiting for the cessation of the hemorrhage before opening the trachea. In this, he differs from Dr. Gross, who has written most extensively upon this subject, and M. Trousseau, who has had the largest personal experience. Nothing is said in this paper of the dangers of the operation, which are very variously estimated by writers on the subject. For example, while Dr. Gross says "that there is hardly an operation in all surgery he would not rather undertake," we have heard M. Trousseau declare that it is "a physician's operation rather than a surgeon's—one of those little operations which every medical man should perform." Within one week from the time we heard Trousseau make this declaration we saw him, in a case of croup, assist his interne to pass the canula directly through the trachea into the œsophagus, the bistoury having previously freely removed every impediment to such a proceeding.

One of Mr. Forster's patients, a pale, delicate little child, ten months of age, died four hours after being removed from the table, and he adds that "there cannot be a doubt that the loss of blood necessarily attendant upon an operation of this description in so young a child, was a direct and immediate cause of its dissolution."

Under the head of "Injuries to Veins," three cases are given of fatal hemorrhage from wounds of the following veins: the internal jugular, the popliteal, and the cephalic. The application of ligatures to bleeding veins is urged, as at all times to be preferred to allowing any patient to lose even a small quantity of blood.

Five cases of extravasation of urine in children are added. In all cases of the kind occurring in children, independently of accident, Mr. Forster believes that the extravasation arises from a stone becoming impacted in the urethra, giving rise to ulceration of the membrane. The practical directions he gathers from these cases are as follows:—

"1. Attend to the earliest symptom, viz., retention of urine in children.
2. Incise the parts freely into which the urine has extravasated.
3. Search for and remove the calculus immediately.
4. Do not pass the catheter."

V. *Remarks upon some of the Specimens of Diseases of the Bone contained in Guy's Museum, especially those styled Osteo-sarcoma and Myeloid, with reference to the Question of Malignancy.* By Samuel Wilks, M. D.

From some general remarks at the beginning of his communication, we find that Dr. Wilks does not believe that "cancerous" and "malignant" are convertible terms. He believes that cancerous tumours, that is, tumours containing the anatomical elements called cancerous, are not all malignant—in which we would say *en passant* that we do not agree with him—and again, and here we do most fully agree with him, that some tumours are malignant, which do not contain any of these elements.

Some pathologists, as, for example, Lebert and Bennett, would give up the word *malignant* altogether. The former exclaims that in using such a term we are no better than the common people, who divide diseases into those that are fatal, and those that are not, or than shepherds, who classify plants as eatable and as venomous. If the question as to the malignancy of a growth is very unscientific, it is nevertheless, as Dr. Wilks says, the most important which can be asked concerning it. The truth is that we cannot get along, even if it should be thought desirable to do so, without such words as "malignant" and "benignant," or some equivalent ones. These are certainly decidedly preferable, and more correct than any substitutes that have been proposed, not excepting the "general" and "local" of Lebert.

The most profound anatomical research has not yet told us the cause of the malignancy of certain growths. Aided by the microscope, a certain pathological school thought that nothing would remain unknown. By this instrument, it was said, the anatomical elements existing in a tissue can be determined, and it is these that give it its properties. But tissues having, for characteristic anatomical elements, cancer cells, epithelial cells, fibro-plastic elements, cartilage corpuscles, and the so-called corpuscles of bone, have all been found to be malignant. The chief heterology, in malignant growths, according to the most skilful and candid observers, is now conceded to be the disorderly crowding of their elements. The distinction between innocent and malignant tumours is, as Paget says, probably one, not of mere visible structure, but of origin and vital properties, and upon these subjects it is more pleasant than useful to speculate. What we here want, what we really need, are facts, and hence the paper of Dr.

Wilks is one of real value, containing, as it does, important facts in connection with some of the cases of the carcinomatous, osteo-sarcomatous, and myeloid tumours contained in the magnificent museum of Guy's Hospital. In the carcinomatous, the whole bone is invaded by the disease, and destroyed. In the early stage of the disease, the cancerous material is seen to be deposited, for the most part, in the medulla of the shaft of the long bone, though sometimes the disease approaches in its mode of growth the osteo-sarcomatous, and springs decidedly from the periosteum. In the so-called osteo-sarcoma the growth appears wholly to proceed from the periosteum, until a large tumour is formed around the bone, so that in all cases the shaft is still seen running through the tumour, and is thus distinguishable from the perfect cancer. In all the cases, to which a history is attached, "the disease has returned within the body." Osteo-sarcoma is therefore a malignant disease, though the anatomical elements are those found in the normal, healthy tissues of the body.

One case of *osteoid cancer* is given, and the preparations of the extremely interesting specimens described. The osseous deposits, commencing in the bone, were repeated in the lungs and other organs.

With reference to the purely *enchondromatous tumours*, he declares that the want of a large number of observations renders it impossible to speak with any degree of certainty respecting their character for malignancy.

Myeloid tumours are believed by him to be innocent; by this term "meaning to imply that the result of all observations made by others, as well as ourselves, is, that these tumours, when removed, do not return, and if the patient has died soon after the operation, no other morbid growths have been found in the body." Some of the specimens described are examples of the fibro-myeloid disease, and others of the cysto-myeloid, the loculi into which the tumour is divided by processes of the periosteum passing into it being filled with fluid. The general anatomical formation of these "myeloid tumours is decided and peculiar; a large round tumour is formed at the extremity of the shaft of the bone, forming a striking contrast to the large, long, and irregular-shaped, destructive carcinomatous tumours, or the osteo-sarcomatous growths which simply spring from the outside of the bone."

It is not altogether correct, however, this statement, that the result of all observations declares their innocence, for Mr. Paget believes that they are sometimes malignant, and records two cases in support of his opinion (*Lect. on Surg. Path.*, vol. ii. p. 228).

Two lithographic plates, containing twelve figures, are attached to this paper. Ten specimens of myeloid disease, one of osteoid cancer, one of carcinoma, and one of osteo-sarcoma, are there represented.

VI. *On the Treatment of Purulent Ophthalmia.* By John F. France.

The volume for 1855, of *Guy's Hospital Reports*, contains a paper upon the same subject by this author, who enjoys considerable reputation in London as an oculist. In that paper a combination of therapeutical means constituting his mode of treatment is recommended, which is thought by the author to possess some originality.

The treatment consists in division of the external canthus, daily local depletion by scarification and leeching, the use of a collyrium of nitrate of silver, from three to eight grains to the ounce, unceasing ablution with poppy-water and alum, one drachm to the pint, the exhibition of mercury, and the use of quinine with a moderately nutritious diet.

From the history of one of these cases, we learn that the patient, a man, suffering from chronic ophthalmia, was inoculated for his cure with purulent ophthalmia at the London Ophthalmic Hospital. Mr. France says of this, with truth, that "the responsibility of exciting so formidable a disease will not lightly be incurred by practitioners who esteem their patients' welfare the paramount consideration." He might, and with justice, have spoken much more harshly than he has chosen to do.

VII. *Ophthalmic Cases.* By John F. France.

The first case is one of melanotic cancer of the eye, in which the disease having then lasted nine years, the globe was extirpated. The optic nerve was unsound at the place of division, being infiltrated with melanotic deposit. About two months afterwards "painful lumps formed about her legs and body," and the patient died exhausted seven months after the removal of the primary seat of disease.

In the second case the ocular globe was enucleated, after the method of M. Bonnet, on account of a tumour embracing half the circumference of the globe, and occupying the anterior chamber, though the cornea remained clear. The operation was performed in May, 1857, and no more of the history of the patient is added, excepting that she was convalescent in a few days. The same operation was performed in the third case, with the same result of convalescence in a few days. Both of these cases are very unsatisfactory; in fact, they are useless so far as the conveying of any useful information is concerned.

The fourth case is one of fungous hæmatodes of the globe, treated without operation. The patient, a girl, two and half years of age, had been affected for fifteen months, when she entered the hospital, and she died about seven months afterwards. In this case, the course of treatment adopted was based upon the principle, one that should never be forgotten, that "to prolong life to the utmost span is the acknowledged first duty of the practitioner." These cases are illustrated by a plate containing three figures, which represent the appearance of the three eyes removed by operation.

VIII. *Cases of Idiopathic Fatty Degeneration; with Remarks on Arcus Senilis.* By Samuel Wilks, M. D.

By *idiopathic* fatty degeneration, Dr. Wilks means a fatty degeneration which has no evident cause. In the cases he relates, nine in number, the only appreciable or probable causes were hemorrhages, diarrhœa, or miasmata. All these causes may be considered as producing an anæmia, which, if long continued, will lead to fatty degeneration. The only objection to this is, that the discharges mentioned, the hemorrhages and the diarrhœa, may be the result of the organic changes, and not their cause.

These cases are the more striking that the patients were all comparatively young. They became, without any known cause, more and more feeble, and died. A fatty degeneration of the heart was the most marked and important occurrence at the autopsies; in some cases the liver and other organs were only moderately fatty. At the same time, there was no excess of fat in other parts, and the patients were not wasted.

To these cases one is added to exemplify the very similar condition of fatty degeneration produced by the excessive use of alcohol.

Dr. Wilks is led by the total absence of *arcus senilis* in these cases, to make some general observations on this pathological condition of the cornea, to which of late so much importance has been attached, as indicating a general fatty degeneration of the body, and more particularly of the heart. He does not believe that it indicates any particular change within the body, but that it accompanies concomitant senile changes in the body generally; the term being still applicable if old age should be premature.

In support of his opinion he gives some facts taken from the post-mortem records of the last two years in the hospital, and adds to the cases he has already given in full five others of fatty heart with no arcus, one where it was "partial," and one very "slight." Seven cases are also given of extreme fatty degeneration with valvular disease, in none of which was there arcus. In fifteen cases in which there was arcus senilis, there was no fatty degeneration of the heart. There is but one case of arcus associated with fatty degeneration of the heart in a young subject, and therefore he considers it altogether exceptional. In those cases, and of these seven are cited, in which the arcus does exist with fatty heart in old people, the change is not so much that of the muscle itself, as of the external fat increasing at the expense of the wall of the right ventricle.

Dr. Wilks thinks it highly probable that a confusion in the expression *fatty heart* may lead to these differences of opinion in regard to the connection of this affection with arcus senilis. Two very different pathological conditions may have been included under one name, and the arcus may be connected with one of them and not with the other. In one of these conditions the muscular tissue of the organ itself has degenerated; in the other there is but little change in the heart, but it is covered with fat. His conclusion is, that the arcus senilis is accompanied by this latter form of fatty heart, and has no connection with the other, but prefers not offering any decided opinion until a great many more observations have been made.

In terminating, some remarks are made in reference to fatty heart in connection with sudden death, and with fatal accidents from the administration of chloroform. In many of the cases of sudden death he has examined, the heart has not been fatty; and, on the other hand, fatty hearts are every week met with in persons who have died a lingering death. He does not believe, either, that there is any connection between the affection of the heart and sudden death during the administration of chloroform.

IX. *On the Causes of Death after Lithotomy.* By Thomas Bryant.

The paper of Mr. Bryant is a very interesting and a very useful one. From the *clinical records* of the hospital, 176 cases of lithotomy were collected; and from the *notes of the necroscopic examinations*, together with those from the above that terminated in death, 40 fatal cases were collated. These materials have all been carefully analyzed.

The following table is given to show the ages at which the operation was performed, and its fatality at the different periods:—

	No. of cases.	Fatal cases.
5 years and under . . .	55	3
6 to 10 inclusive . . .	38	...
11 " 20 " . . .	36	4
21 " 30 " . . .	10	...
31 " 40 " . . .	6	...
41 " 50 " . . .	7	4
51 " 60 " . . .	18	10
61 " 70 " . . .	5	3
71 " 80 " . . .	1	1
	176	25 cases, or 14.20 per cent. were fatal.

From this table it must be concluded, contrary to the general opinion, that lithotomy during the first five years is more fatal than during the next quinquennial period, at least among the patients met with in hospital practice. This is attributed by Mr. Bryant to the powers of the child being then insufficient to counteract the depressing tendency of the operation, with the accompanying loss of blood and shock to the system. Another consideration which may be allowed to have some weight is this, that when calculus makes its appearance in very young persons, contrary to what is the case in after-life, it is, as a general rule, among the most miserable and unhealthy, consequently the worst, subjects for a grave operation.

Nearly all of the 25 fatal cases are given in detail, with the history of the *post-mortem* examinations. In 5 cases the patient never rallied after the operation; the ages were 70, 72, 42, 44, and 48. In 6, hemorrhage was the cause of death; and the same number died also from inflammation of the kidneys, from inflammation of the cellular tissue in the pelvis, and from pyelitis and pelvic cellulitis combined. In 3 cases the pelvic cellulitis was associated with accidental causes, 2 with perforation of the rectum, and 1 with hemorrhage. This inflammation of the cellular tissue in the pelvis, which is the most fatal danger of lithotomy, is believed by Mr. Bryant to arise generally without urinary infiltration, but to be "a result of continuity of structure which has become inflamed from the necessary injury inflicted upon it by the operation, or by the presence of a calculus." Five cases were fatal from pyæmia, 1 from acute cystitis, 1 from peritonitis, and 1 from inflammation of the air-passages after chloroform. In this last case, however, it must be said that the operation was performed in a cold theatre, upon a February winter's day. Chloroform, independent of its own special risks, is not judged by Mr. Bryant to have any influence upon the fatality of the operation.

It is to be regretted that the instrument used in opening the bladder is never mentioned, except in one case, one of those in which the rectum was perforated. Here the "double-cutting edged gorget" was made use of. We take it, therefore, that the ordinary gorget was used in all the other operations.

X. *Cases of Retention of the Menses relieved by Puncture through the Rectum.* By Henry Oldham, M. D.

These cases are two in number; in one, the retention of the menses was the result of congenital absence of the vagina; in the other, the vagina had been injured during labour, and its walls adhered together and cicatrized.

These cases illustrate the ease, safety, and success with which the uterus distended with menstrual fluid may be relieved by puncture through the rectum. As a channel for the flow of the menses, the rectum answers as well as an artificial vagina, and no operation should be performed for any other purpose; "it is far better," as Mr. Oldham says, "that marriage should be known to be a physical impossibility, than that its consummation should provoke disgust, disappointment, and estrangement."

In one of these cases, after the opening had been made four times, at as many menstrual periods, the orifice remained open; in the second, after the first operation the patient never returned to the hospital. The instrument preferred is a sharp-pointed bistoury, with lint wrapped round it, leaving about an inch from the point free.

XI. *Cases of Disease of the Pulmonary Artery and its Valves.* By G. Whitley, M. D.

This paper contains the histories of three fatal cases of disease of the pulmonary artery and its valves, which had been recently under treatment in the hospital, and the histories of three others connected with preparations preserved in Guy's Museum are appended.

In two cases the affection was diagnosed during life by a well-marked *frémissement cataire*, heard loudest towards the upper part of the left side of the chest. The chief general symptoms present in these cases were anæmia and emaciation.

Two plates are added, for the purpose of representing the condition of the parts in the three recent cases.

XII. *On Abscess of the Brain.* By William Gull, M. D.

This paper is one of considerable length, comprising sixty pages; at the same time, it is one of the most interesting and clearly written in the volume. The author thinks that we have no evidence of any such intrinsic perversion of the nutrition of the brain as leads to suppuration, and therefore does not admit the occurrence of *idiopathic* cerebral abscess. It is well to observe that he confines the use of this word to its proper signification, for with some writers it signifies only that the origin is unaccounted for. With the exception of suppuration produced by scrofulous deposit, and of that following direct injury, it is always a secondary result of the suppurative process in some distant part, or of chronic disease about the head. The source of the suppurative tendency it is often difficult to discover; in one of the cases related by Dr. Gull it was found to depend upon chronic suppuration of the mesenteric glands from ileitis in a debilitated subject.

The pathological order of the symptoms in abscess, as deduced from his observations, is headache, local or general convulsions, drowsiness, paralysis, coma. No one of these is pathognomonic; it is their order and duration which give them their characteristic importance. Particular stress is laid upon the headache; "it is different both in character and duration from that symptomatic of tumour. It is rarely paroxysmal and neuralgic, as it is in tumour, but more general and uniform in its expression, as well as more sudden in its rise and acute in its progress." The frequent absence of rigors in cerebral suppuration is noticed.

Sixteen cases of the affection are carefully related, with the *post-mortem* examinations; and to each *remarks* are added.

This paper may be looked upon as particularly valuable as a contribution to our knowledge of purulent infection. In one case (the ninth) there was chronic suppuration of the mesenteric glands, two collections of pus in the spleen, one in the cortical portion of the right kidney, and abscesses in various portions of the brain. According to the generally received theories of purulent infection, the liver in this case should have suffered before these other organs. A fact worthy of remark, in this connection, is this, that abscess generally forms in the white substance, rarely in the gray, though the latter is the more vascular.

XIII. *Paraplegia from Obstruction of the Abdominal Aorta.* By William Gull, M.D.

This paper contains the history of a case of paraplegia which began suddenly while the patient, a shipwright, 34 years of age, was at work in a sitting posture. Previous to the attack the man was in good health, or supposed himself to be. This was in the month of March, 1855, and he did not enter the hospital until June.

"On examining the spine, no tenderness or irregularity could be detected, but, on auscultation, a soft bellows-murmur was audible down the back, but most distinctly at the lower angle of the scapula, on the left side. Percussion elicited some dulness where the murmur was most audible. Anteriorly, under the ensiform cartilage and lower third of the sternum, there was a prolonged bellows-murmur, not heard so distinctly upwards in the course of the aorta, or towards the left axilla. There was no pulsation in the abdominal aorta, nor in the arteries of the lower extremities. The legs were cold, the muscles wasted; no œdema nor any venous turgescence in them." The subcutaneous arteries on the front and back of the trunk were enlarging at the present time (August, 1857), and as the arterial communication between the upper and lower parts of the body became more free, the power returned in the lower limbs. No pulsation was yet discoverable in the abdominal aorta or the femoral vessels, or in any of their branches.

This case is as yet incomplete, but it is so remarkable that Dr. Gull has done well in placing it on record.

A plate, containing two figures, is attached to this paper, for the purpose of representing the appearance of the subcutaneous arteries on the abdomen and back.

XIV. *Contributions to the Practical Surgery of New Growths or Tumours.* Series I.—Cancer. By John Birkett.

The author of this paper proposes, "in this and the subsequent series of cases, to illustrate, for students more especially, the natural history of every form of new growth which has come under observation within the walls of Guy's Hospital." Though the histories of the cases which he has chosen for this paper are interesting and valuable to every student, they are particularly so to those who have access to the museum containing the preparations to which he makes reference. The costliness of illustrating the text by coloured drawings, rendered such an advantage impracticable, much as it was to be desired by students at a distance.

In several of the cases related it seems evident that considerable advantage was gained by amputation of the limb in which the disease was situated; the operation being performed, of course, not with the hope of radical cure, but of prolonging life and of assuaging pain. This is quite in accordance with Paget's statement, that the removal of the growth would seem to retard the course of cancerous disease that otherwise would be very rapid.

XV. *Remarks on the Wax Models in Guy's Museum, representing Roseola Cholerica and Roseola Variolosa.* By the Curator.

A tolerably uniform eruption has been described by many observers as occurring at a certain stage in cholera in the course of the first or second day after reaction with its secondary fever has set in. This eruption is sometimes in large patches resembling roseola; at others, the spots are smaller, more defined, and less vivid; and at others, there is a rash closely resembling scarlatina. These different varieties are represented by five models. The rash styled roseola variolosa, which accompanies an abortive form of smallpox, "that is, a disease in which the most violent constitutional symptoms of variola are present, together with the first indication of an eruption, but the latter suddenly ceasing after the evolution of the rash of which we are now speaking," is represented by four models.

These models were made by the distinguished artist, Mr. Towne; and on account of their excellence he received a medal in the fine art department, at the late Paris Exhibition.

XVI. *Description of a Case in which a Urethro-Vesical Calculus was removed.* By Alfred Poland.

The history of this case was communicated on account of the shape of the calculus, which resembled that to which the name of "bar-shot" and "dumb-bell" has been applied by some surgeons. It assumed "somewhat the shape of an inverted old-fashioned German pipe." It was extracted by means of the incisions usually made in ordinary lithotomy—the laying open of the perineum, and the laying open of the urethra, with partial section of the prostate gland. The patient was twenty years of age, and from early infancy had, from time to time, experienced uneasy sensations and pains in the back and urinary organs.

The following explanation is given of the above case as the most rational: "that whilst young the patient had a small urinary calculus form in the kidney, that this passed down the ureter into the bladder, and subsequently escaped into the pouch of the prostate, where it became impacted and made a bed for itself. Here it gradually grew and attained its present size. At some time, probably only a few years back, calculous deposition took place on the posterior and upper part, which gradually extended into the bladder by means of a small peduncle through the cervix; but when entering the cavity fresh depositions took place, and increasing to the size depicted."

The paper is accompanied by a short appendix of six recorded cases bearing upon the subject. It is illustrated by eight wood-cuts, and a lithographic plate representing a section of the calculus, and also an imaginary sketch of the side view of a bladder, prostate, and penis, showing the probable position of the calculus as met with in the operation.

XVII. *Notes on Cases of Black Urinary Precipitate.* By H. M. Hughes, M. D.

In the last volume of *Guy's Hospital Reports*, together with some other cases of a somewhat similar nature, Dr. Hughes reported one where a young girl, suffering from abdominal disease of a scrofulous character, passed urine which, clear when passed, when boiled and mixed with nitric acid, let fall a dense black precipitate, the chemical constitution of which was not ascertained.

In this communication he gives the history of another, where the same phenomenon was witnessed in the urine, the patient here being a man 50 years of age. In this case, also, there was some abdominal disease, "below the region of the liver was felt a firm tumour, nearly as large as a two-penny loaf, which distinctly passed under the hand placed upon it, when the diaphragm descended upon deep inspiration."

Dr. Hughes states that he has never seen or heard of this except in the two cases recorded, though he has had nearly thirty years' experience in one of the largest hospitals of Britain; "during which time, in many hundreds, perhaps thousands of instances, the urine has been examined by heat and nitric acid."

XVIII. *Sequel of a Case of Successful Trephining of the Skull for Rupture of the Meningeal Artery performed years ago.* By Edward Cock.

The patient whose history is here given had been operated upon in 1841, and the case is fully related in vol. vii., 1st series, of *Guy's Hospital Reports*. He was then forty-six years of age, and the operation was performed to relieve compression of the brain from hemorrhage, there being no fracture of the skull. He left the hospital well with the exception of occasional epileptic fits, and continued so until 1855, when he returned with partial hemiplegia, which had followed one of these attacks. He died in an apoplectic fit a few months afterwards. At the *post-mortem* examination the brain was found softened, and the bloodvessels throughout the brain were extremely diseased; the ventricles contained three or four ounces of blood, and a large quantity of semi-coagulated blood was found in the brain in the neighbourhood of the seat of the operation. As regarded the opening made by the trephine it was not replaced by the growth of any new bone, but it was filled by a tough membrane composed of the integument on one side and the dura mater on the other.

XIX. and XX. These two papers are by ALFRED S. TAYLOR, on *Poisoning by Tartarized Antimony*, with medico-legal observations on the cases of Ann Palmer and others, and on the *Detection of Absorbed Strychnia and other Poisons.*

These papers occupy 133 pages, and possess great interest for the medical jurist, to whose attention we recommend them. W. F. A.

ART. XXII.—*Researches on Epilepsy: its Artificial Production in Animals, and its Etiology, Nature, and Treatment in Man.* By E. BROWN-SEQUARD, M. D., Professor of Physiology at the Cooper Institute, N. Y., etc. etc. Republished from the Boston Medical and Surgical Journal, from Nov., 1856, to Nov., 1857. Boston, 1857. 8vo. pp. 82.

IN a course of vivisections, Dr. Brown-Séquard found that certain injuries of the spinal cord, in animals, produced convulsions of an epileptic character. These injuries were—1st. A transverse section of a lateral half of the cord; 2d. A transverse section of the two posterior columns of the cord, of its posterior cornua of gray matter, and of a portion of the lateral columns; 3d. A transverse section of either the posterior columns, or the lateral, or the anterior alone—when the incision has been deep enough to implicate the gray matter; 4th. A transverse section of the entire cord; and 5th. A simple puncture.

Convulsions were more especially the consequence of the first, second, and fourth of these injuries, especially when inflicted on that part of the cord which extends from the seventh or eighth dorsal to the third lumbar vertebra.

In other experiments, few in number, the section of the central gray matter, with but slight injury to the white matter of the cord, was followed by epileptiform convulsions.

The convulsive paroxysms usually occur during the third or fourth week after the injury. In some cases they began during the second week, or a day or two before. At first the paroxysm consists only in a spasm of the muscles of the face and neck, on one or both sides, according to the extent of the transverse incision, and is of short duration. After a few days the paroxysm becomes more complete, and all the parts of the body, not paralyzed, are convulsed.

The parts convulsed vary according to the seat of the spinal injury. When this occurs near the last dorsal vertebra, or the first lumbar, and consists of a section of a lateral half of the cord, the convulsions affect all parts of the body, excepting the posterior limbs on the side of the injury. When the section implicates the two posterior columns, a part of the lateral columns, and the gray matter, the convulsions are universal, but most violent in the anterior parts of the body. When the incision of the cord is on a level with the last dorsal vertebra, and implicates the two anterior or the two lateral columns, the convulsions are ordinarily limited to the anterior portion of the body, but not always; the posterior limbs are at the same time affected with very strong tetanic spasms. After a transverse section of the central gray matter, or of the whole spinal cord in the dorsal region, the convulsions are confined to either the anterior or posterior parts of the body.

The convulsions may occur spontaneously, or after certain excitations, as a forcible suspension of respiration for a couple of minutes, or pinching the skin of certain parts of the face and neck. If there is a transverse section of only one lateral half of the spinal cord, irritation of the side of the face and neck on the same side as the injury gives rise to convulsions; and if both sides of the cord have been injured, irritations of both sides of the face and neck are followed by convulsions. The parts which, when irritated, give rise to convulsions are confined to certain parts of the face and neck. In the face, irritation of the parts which are animated by the ophthalmic nerve is not followed by convulsions; and only a few of the filaments of the two other branches of the trigeminal nerve produce convulsive paroxysms when irritated; these are, more especially, the sub-orbitary and auriculo-temporalis—the same property is possessed also, perhaps, by a few filaments of the second and third cervical nerves. The nostrils, the lips, the ears, the skin of the forehead and of the head may be irritated without the production of convulsions, as may also the parts in the neighbourhood of the median line of the neck, either in front or behind.

Dr. Brown-Séquard ascertained that it was not in consequence of the pain produced by the irritation, in these experiments, that the convulsions were brought on. Thus, in cases where the incision of the spinal cord implicated only one of its lateral halves, irritation of the opposite side of the face or neck does not produce convulsions. In these cases, also, the posterior limb on the same side with the injury is in a state of hyperæsthenia, and the most violent irritation of that limb does not produce convulsions; again, severe irritation is not required to bring on the convulsive paroxysm, it is sufficient sometimes to merely touch or even blow upon the face or neck to excite convulsions; while, it can be shown, that the parts about the face and neck have not a greater amount of sensibility than the other parts of the body.

"The production of fits by the irritation of certain parts of the neck and face seems to belong to reflex actions. It is well known that an irritation of the skin and of the mucous membranes may easily produce certain reflex movements, which very rarely take place after an irritation of the trunks of the sensitive nerves. For instance, coughing is almost a constant result of an irritation of the mucous membrane of the larynx and of the bronchial tubes, while it is very rarely produced by an irritation of the trunk of the par vagum. Something similar exists for the production of the convulsive fits when the face is irritated in animals upon which the spinal cord has been injured. If we lay bare the nerves of the face and neck of these animals we find that even the greatest irritations upon them do not produce a fit. Besides, if we dissect a large piece of the skin of the face, so as to let it be in connection with the nervous centres only by the superorbitary nerve, we find that the irritation of this piece of skin is still able to produce convulsions, while the irritation of the very nerve which connects it with the brain does not produce any. It seems, therefore, that it is in the cutaneous ramifications of certain nerves of the face and neck that resides the faculty of producing convulsions in the animals upon which I have injured the spinal cord. There is, in that case, as I will show hereafter, something resembling what takes place in man in cases where a ligature around a limb is sufficient to prevent a fit of epilepsy."

The following the author believes to be the conclusions deducible from the facts thus far set forth: 1st. That an injury of the spinal cord may give rise to an epileptiform affection. 2d. That there is a relation between certain parts of the spinal cord and certain branches of a portion of the nerves of the face and neck. 3d. That epileptiform convulsions may be the constant effect of slight irritations of certain nerves. 4th. That even when an epileptiform affection has its primary cause in the nervous centres some cutaneous ramifications of nerves not directly connected with the seat of injury in these centres have a power of producing convulsions, when other nerves, even directly connected with them, have not. 5th. That the ramifications of certain nerves may have the power of producing convulsions, while the trunks of these nerves have not this power.

Dr. Brown-Séquard adduces a number of observations from different writers on nervous diseases, which would seem to show that, in the human subject, the peculiar disturbance of the cerebro-spinal axis which constitutes epilepsy may be generated by alterations of different parts of this nervous axis and by many nerves.

In regard to the division of epilepsy into *centric* and *peripheral*, the author endeavours to show that even in cases where the disease appears, most certainly, to be of peripheral origin, it may sometimes be, in reality, of centric origin. To determine the fact during the lifetime of the patient is often impossible.

He points out the very great analogy which exists between the aura epileptica in man and the pain originating in the skin and face of the animals operated on. In neither does the trunks of the nerves seem to have the power of producing convulsions, but only their ramifications in the skin or in the muscles. If there is induced an interruption of nervous transmission between the skin and the nervous centres, no paroxysms afterwards occur, or only in greatly diminished frequency. The doctor has collected many cases of epilepsy attended with an evident aura epileptica, in which either a diminution of the fits, or, as was more frequently the case, an entire suspension of them took place after the interruption of nervous transmission between the starting point of the aura and the nervous centres was effected by ligature of a limb or finger, section of one or many nerves, amputation of a limb or other part, elongation of the muscles which are the seat of the aura, or cauterization by various means of the part of the skin from whence the aura originates.

Dr. Brown-Séquard is led to believe, from what occurs in animals after an injury of the spinal cord, and from some cases observed in man, that the existence of a particular spot capable of producing a convulsive paroxysm when irritated is not of rare occurrence in epileptic patients, which spot may or may not be the starting point of an aura.

After presenting a number of facts having a bearing on this particular question, the doctor remarks: "On one side, therefore, we find that an irritation coming from the skin or a mucous membrane may produce fits without being felt; whereas on another side, when there is the feeling of aura epileptica, the variety of the sensations, and their feebleness, often show that it is not they which cause the fit, so that we must admit that even then it is a peculiar, unfelt irritation which produces the attack. In my animals, as I have tried to prove, it is not the pain caused by pinching the skin of a part of the face and neck which produces the fit, but *a peculiar kind of irritation.* Perhaps the special irritation which generates a fit gives sometimes a sensation quite special also, and which cannot be described. If we take notice of these three sets of facts—1st, that there are cases of epilepsy in which an irritation arising from the skin, or from the neighbouring parts, may cause fits without being felt; 2dly, that by pressure or galvanism we may produce in a part the kind of unfelt irritation which causes fits; 3dly, that such a part being found, epilepsy may be cured by either the application of ligatures, the section of a nerve, or cauterizations, &c., it becomes evident that it is of the greatest importance to try to find out in epileptics who have no aura epileptica, if there is not a part of the skin or muscle from which arises an unfelt irritation causing the fits. To ascertain the state of things in this respect, various means may be employed. If the fits are frequent, and if they come at regular times, it will be found, by placing tight ligatures around the limbs, whether the attacks are due to an irritation coming from these parts or not. Among other means of detecting the existence or absence of a peripheric irritating cause of the fits are the following: pressure upon various parts of the body; the application of localized and powerful galvanic currents; the application of ice and of a wet and warm sponge, &c. If any part is the seat of a pain, even if this pain seems to have no relation with the fits, it will be necessary to ascertain whether pressure, galvanism, &c., applied upon this part, produces an attack. If it is in a limb that a pain exists, a ligature will decide the relation of the painful spot with the fits. In cases where there is a cramp in some of the muscles, or in one only, at the beginning of the fit, the inducement of a cramp by galvanism might decide if the attack is due to the irritation of the sensitive nerve of the contracted muscle, or if the cramp is nothing but a manifestation of the attack. If the initial cramp exists in a limb, an elongation of the contracted muscle, or a ligature, might lead to the solution of the question."

The danger of producing a fit by these means should not, according to the author, deter us from their use; the fit itself, especially when we are prepared for it, being a small evil in comparison with the great good that may be derived from such a trial.

After adducing a series of arguments to sustain his position as to the influence of an aura epileptica, or of a peculiar kind of irritation of the peripheral nerves, as a cause of epileptic fits, Dr. B. S. enters into a brief examination of the various doctrines concerning the seat and production of epilepsy heretofore advanced; and, having pointed out what he considers their deficiencies, he proceeds to present his own views in elucidation of some of the principal questions involved in the pathology of epilepsy.

Having by experiments, in which the brain proper was removed, and others, where the cerebellum and even the whole basis of the encephalon excepting the medulla oblongata and pons Varolii were also removed, shown that epileptic convulsions are produced independently of the brain, he concludes that epilepsy must have its seat in either the pons Varolii, the medulla oblongata, or the spinal cord, or in these three parts together. He considers it to be very probable that its seat is in the upper part of the spinal cord—in the medulla oblongata and the pons Varolii—where the roots of the trigeminal and of the first spinal nerves have their origin.

Considering the parts of the body where convulsions first occur, according to Dr. B. S., we arrive at the conclusion that the seat of epilepsy is very various. Usually, the first spasmodic contractions occur in the muscles of the larynx, of the neck, of the eyes, of the chest, of the face, and in the bloodvessels of the brain proper, showing that the disease is ordinarily seated in the encephalon or upper parts of the spinal cord, or in both. But that its seat may be also in other portions of the spinal cord would seem to be proved by the occurrence of the first spasmodic contractions in one of the limbs, either the inferior or superior.

"After the first spasms all the muscles of the body may be attacked with convulsions; so that, if we take notice of the loss of the actions of the brain proper, there is ground for thinking that the seat of the disease is both in those parts of the cerebro-spinal axis where reside the faculties of perception and volition, and in those endowed with the reflex faculty; but this view, Dr. B. S. remarks, is correct only in appearance. We have shown, he says, that the loss of perception and volition does not prove that epilepsy has its seat in the brain proper; we will try, in a moment, to show the great probability that a contraction of the bloodvessels of the brain proper, due to an irritation of their nerves in the spinal cord and medulla oblongata, causes the loss of the cerebral faculties; and, as regards the increase of the reflex faculty, we will show that a partial and a local increase is sufficient for the production of fits."

Dr. B. S. believes that epilepsy is always the result of an excitation of the cerebro-spinal axis. This excitation he supposes may, in some cases, arise from chemical and physical changes occurring in the elements of the nervous centres in consequence of bad nutrition or other causes.

"As physiology teaches that an irritation of the simple direct motor side of the cerebro-spinal axis cannot cause general convulsions, we are entitled to consider as reflex the convulsive movements which result from direct excitations of the nervous centres, as well as those which result from irritations coming from peripheric nerve-fibres. The so-called *centric* and *eccentric* causes of excitation of epileptic fits, both act on or through the sensitive or excito-motory side of the cerebro-spinal centres, and consequently both act on the reflex faculty of these centres, so that they ought both to be called reflex excitations."

Dr. B. S. believes epilepsy to depend, in a great measure, on an increased reflex excitability of certain parts of the cerebro-spinal axis. He discards the term reflex faculty or property. In all muscular and nervous tissue, he remarks, we have two distinct properties: that of producing actions—the force of which may vary extremely—and a property of receiving excitations, which we call excitability. One of these may be very strong, while the other is very weak. In like manner, as many experiments have convinced him, the reflex faculty of the cerebro-spinal axis is composed of two elementary vital properties, one of which he names *reflex excitability*, and the other the *reflex force*. The one of these vital properties may be in excess with diminution of the other. In most, if not all epileptics, according to Dr. B. S., the reflex excitability is increased, while the reflex force is rarely above, and is often below its normal standard.

Even though the reflex excitability may not be much increased, it may be, however, sufficient for the production of the fit when certain excitations are present.

In regard to the production of epilepsy by a poison in the blood, Dr. B. S. admits that such may be the case when the functions of the kidneys, liver, skin, or other depurative organs are suspended, and, in consequence, certain deleterious matters are allowed to accumulate in the blood, and also in cases where poisonous substances are admitted from without, as lead, strychnine, cyanhydric acid, etc. According to Dr. B. S., nearly all of these latter poisons act only as causes of convulsions by increasing the reflex faculty of the cerebro-spinal centre—they give to the nervous centres the faculty of causing convulsions *when they are irritated*, but *they do not irritate.* He knows of no poison which causes convulsions by a direct irritation of any part of the nervous system, excepting carbonic acid when it is allowed to accumulate from any cause in the blood. While it seems to destroy the reflex power of the cerebro-spinal centre the decarbonized blood, at the same time, *irritates* violently this centre, and, therefore, causes directly powerful convulsions.

While he admits that in epilepsy there is very generally, perhaps always, an increased reflex excitability, with or without an increased reflex force, he recognizes, also, that there is, in a great many cases of epilepsy, a special kind of excitation acting on the nervous centres.

"There are, therefore, three distinct elements for the production of a fit: 1st. Increase of the *force* of the reflex property; 2d. Increase of the *excitability* of this property; and 3d. An excitation of a special nature, or a very violent one. Of these three elements, the last two are the most frequent, and perhaps, as we have said, the first of these two is essential.

"As regards the share of a special excitation in the causation of epilepsy, Dr. B. S. remarks, the cases we have related of the cure of this disease by the section of a nerve, by ligatures, &c., show how considerable it may be. But in my animals we have, in this respect, a better illustration. When the nerves going to the parts of the face and neck, by the irritation of which we are able to cause fits, are laid bare, we find that their irritation does not produce convulsions. If, in these animals, the fits depended only upon an increased reflex excitability of the parts of the nervous centres whence the nerves originate, we should see convulsions follow when we irritate the trunks of these nerves. As there are none, we must admit that when an irritation (and a slight one is often sufficient) to the cutaneous ramifications of these nerves in the skin causes a fit, there is something special in the nature of the excitation springing from these cutaneous nerves. However, there is in my epileptic animals an increased degree of reflex excitability in the cerebro-spinal axis, as we find, even after the section of the nerves of the face and neck, that they have convulsions sooner, and lasting longer, than in a healthy animal, when we prevent them from breathing for two or three minutes."

Dr. B. S. admits it as *possible* that, without any increase of excitability, certain irritations of some portions of the encephalon may produce fits of epilepsy. The least puncture with a needle or pin of the *processus cerebelli ad pontem*, and, as he has found, of the auditory nerve, and of certain parts of the medulla oblongata, in mammals, is sufficient to produce fits of a peculiar kind of epilepsy, in which the animal rotates around the longitudinal axis of his body in consequence of the convulsions. In man, this kind of epilepsy has been frequently observed, excepting that the fits in place of lasting, as in animals during life, are of short duration, and it may be that in him it has been produced, even when there was no increased reflex excitability, as it is in animals.

In respect to the paleness of the face, the spasm of the larynx, and the loss of consciousness, which, either one or all of them, usually present themselves in the commencement of the epileptic paroxysm, Dr. B. S. remarks:—

"When the excitation takes place in the spinal cord and the basis of the encephalon, which gives rise to the fit, the nerve-fibres which go to the head are irritated and produce a contraction of its bloodvessels. Of course this contraction expels the blood, and, in consequence, the face becomes pale. Very often another effect depending on the nerve-fibres of the cervical sympathetic is produced—the dilatation of the pupil. But the reverse sometimes takes place—a contraction of the pupil occurring instead of a dilatation. This last phenomenon is easily explained by admitting that the excitation in the nervous centres takes place near the origin of the third and fifth pair of nerves, and not of that of the cervical sympathetic, as is the case when the pupil dilates. The paleness of the face, and the dilatation of the pupil, when it exists, soon disappear, chiefly in consequence of the obstacle to the venous circulation in the head, and of the state of asphyxia. The cause of the obstacle to the return of blood from the head is not only the contraction of the muscles of the neck, as Dr. Marshall Hall seems to think, but also the state of the chest.

"Among one of the first symptoms of the fit, and as a cause of the cry, there is a spasm of the laryngeal muscles, and a contraction of the expiratory muscles. This contracted state of the chest acts on the heart so as to diminish the force of its beatings, as is the case in the experiment of compressing the chest, made by E. Weber and others, and it acts on the veins in preventing the circulation in them. Although compressed, and unable to beat freely, the heart quickly recovers an apparently great strength; the blood, losing its oxygen and becoming black, acts as a powerful irritant upon the central organ of circulation, so that palpitations, sometimes very violent, occur. Nevertheless, the pulse often remains weak, because the quantity of blood sent to the arteries by the heart is smaller than usual, partly on account of the obstacle to the venous circulation.

"We think that at nearly the same time, when the origin of the branches of the sympathetic nerve going to the bloodvessels of the face receive an irritation in the beginning of a fit of epilepsy, the origin of the branches of the same and other nerves going to the bloodvessels of the brain proper, also receive an irritation. A contraction then occurs in these bloodvessels, and particularly in the small arteries. This contraction expelling the blood, the brain proper loses at once its functions just as it does in a complete syncope. Now, as it has been well proved by the researches of Kellie, Abercrombie, John Reid, Henle, and Foltz, that the quantity of liquid in the cranio-spinal cavity cannot change suddenly, it results that if there is less blood in the brain proper there must be more in the basis of the encephalon and in the spinal cord. In consequence of the impediment to respiration, the blood sent to the encephalon, as well as to other parts of the body, contains but little oxygen, and is charged with carbonic acid, so that the large quantity of blood accumulated in the basis of the encephalon—the medulla oblongata, the pons Varolii, the tubercula quadrigemina, &c.—and in the spinal cord, is endowed in a high degree with the power which I have shown that such blood possesses, *i. e.* to excite convulsions. It may be, as Henle has supposed, that the basis of the encephalon is also excited to cause convulsions in consequence of the pressure exerted upon it by the accumulation of blood. The spinal cord, also, in all its length, is then excited to produce convulsions by the blood which circulates in it."

The foregoing views are defended and enforced by Dr. B. S. in a long series of facts and arguments.

In respect to the production of the change in the cerebro-spinal axis which chiefly constitutes epilepsy, that is, the augmentation of the reflex excitability, he thinks it may take place in two different ways—by a *direct* abnormal nutrition, as in syphilitic, scrofulous, or rheumatic epilepsy; or by an *indirect* abnormal nutrition due to some excitation from a peripheric or a central part of the nervous system. The *modus operandi* of such excitations, Dr. B. S. does not profess positively to know; he thinks it likely, that, in a number of cases, at least, it is through the bloodvessels of the cerebro-spinal axis that these excitations operate to change the nutrition of this nervous axis.

As to the change in certain parts of the skin, mucous membrane, &c., which renders these parts capable of exciting epileptic seizures, he considers it to consist more in alterations in the nature of the excitations that may spring from peripheric nerves than from an increase in the felt excitations coming from these nerves.

"We have shown already that in our animals the skin is not more sensitive in the parts of the face which are capable of exciting fits than in the other parts of the face which have not that power. In man, as we have also shown elsewhere, it is to the nature of the excitation and not to the degree of the pain, springing from some peripheric nerve, that we must attribute the production of the fits. The fact that excitations, starting from the periphery and causing fits, may not be felt; and the fact that when there are sensations accompanying these unfelt excitations, they may vary as to their kind, and sometimes be very feeble, certainly are important arguments to show that the real exciting cause of the fit is something which is not felt."

The mode of production of the most interesting phenomena of a complete fit of epilepsy, the enterchainment and sequence of the several pathological disturbances to which the phenomena of epilepsy owe their origin, are shown by the following table:—

"CAUSES.	"EFFECTS.
1. Excitation of certain parts of the excito-motory side of the nervous system.	1. Contraction of bloodvessels of the brain proper, and of the face, and tonic spasm of some muscles of the eyes and face.
2. Contraction of the bloodvessels of the face.	2. Paleness of the face.
3. Contraction of the bloodvessels of the brain proper.	3. Loss of consciousness, and accumulation of blood in the base of the encephalon and in the spinal cord.
4. Extension of the excitation of the excito-motory side of the nervous system.	4. Tonic contraction of the laryngeal, the cervical, and the expiratory muscles—laryngismus and trachelismus.
5. Tonic contraction of the laryngeal and of the expiratory muscles.	5. Cry.
6. Farther extension of the excitation of the excito-motory side of the nervous system.	6. Tonic contractions extending to most of the muscles of the trunk and limbs.
7. Loss of consciousness, and tonic contractions of the trunk and limbs.	7. Fall.
8. Laryngismus, trachelismus, and the fixed state of expiration of the chest.	8. Insufficient oxygenation of the blood and general obstacle to the entrance of venous blood in the chest, and special obstacle to its return from the head and spinal canal.
9. Insufficient oxygenation of the blood, and many causes of rapid consumption of the little oxygen absorbed and detention of venous blood in the nervous centres.	9. Asphyxia.
10. Asphyxia and, perhaps, a mechanical excitation of the base of the encephalon.	10. *Clonic convulsions everywhere;* contractions of the bowels, of the bladder; of the uterus; erection; ejaculation; increase of many secretions; efforts at inspiration.
11. Exhaustion of nervous power generally, and of reflex excitability particularly, except for respiration. Return of regular inspirations and expirations."	11. Cessation of the fit; coma or fatigue; headache; sleep."

In respect to the *effects* of epilepsy, Dr. B. S. remarks that these depend on three circumstances: 1st, the absence or great diminution of circulation in the brain proper in the beginning of a fit of epilepsy; 2d, the circulation of black blood through the nervous centres; and 3d, the pressure upon many parts of the base of the encephalon and of the spinal cord by the accumulation of blood in their vessels. From these causes result various disorders of the mind, of the senses, and of the vital properties of the nervous centres. For an analysis of the more important of these he refers to Dr. Russell Reynold's work on *Diseases of the Brain.*

Under the head of treatment, Dr. B. S. lays down eleven general propositions—

1. The first thing to be done in a case of epilepsy is to find out if its origin is peripheric.

2. If it be ascertained that epilepsy is of peripheric origin, proper means are to be employed to separate the nervous centres from this origin, or to remove the cause of the excitation entirely. The application of ligatures should be tried first. Sometimes it happens, as in a very curious case recorded by Recamier, that the aura will disappear from one place and reappear in another; it will be well to pursue it thither, and apply ligatures in the new place.

3. If the ligatures fail, the nerve animating either the part of the skin from which originates the aura, or the muscle or muscles which are the first convulsed, must be laid bare, and sulphuric ether thrown upon it. This might, perhaps, be sufficient to cure the affection; if it is not, then the nerve must be divided.

4. Amputation of a limb condemned as barbarous and unnecessary.

5. Blisters, setons, caustics, etc., in the neighbourhood of a part from which an aura originates, are sometimes sufficient, but are less certain than the application of a red hot iron.

6. The best means of treating epilepsy seems to be the application of a series of moxas along the spine, and particularly to the nape of the neck.

7. The nutrition of the nervous centres may be so modified as to effect the cure of epilepsy, principally by medicines which act on the bloodvessels, as strychnia, but especially by those which cause contractions of these vessels, as atropia, ergot of rye, etc.

8. Even when it would seem from the circumstances of the case to be indicated, trephining should not be resorted to until cauterization and other means of producing a modification of the conditions of the skin of the head have failed.

9. Cauterization of the mucous membrane of the larynx is an excellent means, not only of diminishing or preventing the spasm of the larynx, but as a means of producing a modification in the nutrition of the medulla oblongata.

10. As a means of treatment too much neglect, the possibility of the transformation of epilepsy into intermittent fever, has been proved by facts observed by Drs. Selade, Dumas, &c. Between the two diseases there is supposed to be strong analogies. It is suggested, therefore, as of the utmost importance to endeavour to generate fever and ague in epileptics as a means of cure.

11. Hygienic means are as important as the medical treatment, and sleeplessness ought to be as much combated as the disease itself.

As regards the treatment of the fits, the prevention or diminution of asphyxia cannot be too much insisted on, as it seems certain that the circulation of black blood in the nervous centres prepares for the production of future fits. For this object the best means are—1st, dashing very cold water on the face; 2d, the inhalation of chloroform.

We have endeavoured to present a very full outline of the views advanced by Dr. Brown-Séquard in explanation of the etiology, nature, and treatment of epilepsy. The facts and arguments upon which these views are based are deserving of a careful study on the part of every practitioner. The entire treatise is replete with physiological and pathological propositions of deep interest and importance which strongly press it upon the notice of the profession.

D. F. C.

Art. XXIII.—*A Report on Diseases of the Cervix Uteri; read before the Medical Society of the State of Georgia, at the Annual Meeting in Augusta,* April, 1857. By Joseph A. Eve, M. D., Professor of Obstetrics and Diseases of Women and Children, in the Medical College of Georgia. 8vo. pp. 42. Augusta, 1857.

When we take into consideration the degree of attention which, of late years, has been directed to the investigation of the morbid conditions of the uterus, and the amount of talent and experience that have been brought to the task, it was but reasonable to anticipate that a much greater degree of unanimity would exist among physicians in reference to the nature of uterine diseases—the frequency of their occurrence—their diagnosis—their pathological importance, and their most successful management.

When we turn, however, to the current records of our profession, or hark to the lessons of distinguished teachers, we find that, on all the leading questions connected with the subject of uterine pathology and therapeutics the utmost discrepancy of opinion prevails. By authorities of equal weight—having equal opportunities for the acquisition of accurate information, and who are apparently equally prompted by the desire to arrive at correct conclusions themselves, and by the promulgation of their observations to lead others "into the way of truth," the most discordant and contradictory views have been advanced—the most opposite plans of treatment have been proposed. One class insists that displacements and flexions of the uterus, and inflammation and ulceration of its mouth and neck are of frequent occurrence throughout all the periods of woman's life, from puberty onwards, and refers to these several morbid conditions of the womb, not merely menorrhagia, dysmenorrhœa, leucorrhœa, sterility, and abortion, but the production likewise of nearly every deviation from health observed in the female—the majority of the diseases with which she is attacked—especially those of a nervous and of a chronic character. While, by another class, the morbid conditions of the uterus which are esteemed by the first to play so constant and important a part in the pathology of the female it is maintained, have no such pathological importance—that even as local affections they are rather inconvenient than dangerous, in reference to either their direct or remote results; and in support of the correctness of their conclusions, each party refers to direct observations and a long array of statistics.

Which of the two is correct can only be determined by future clinical investigations, in the prosecution of which every source of fallacy is carefully excluded—whether arising from a partial or one-sided examination of the cases investigated, and of the results of the therapeutic measures to which these are subjected, or from the preconceived views of the investigator as to their true pathological character, or the actual effects of the remedial means employed. The question as to the frequency and pathological importance of the abnormal states of the uterus is still an open one—and, when finally settled, it will be found, we suspect, that, in relation to it, as in relation to almost every other mooted question in pathology and therapeutics, truth lies midway between the two extremes presented in the opinions now advocated by different writers and teachers. From the results of our own observations, which have not been very limited in extent, nor, we trust, carelessly conducted, the conclusion to which we have been led is, that while displacements and flexures of the womb, and inflammation and ulceration of its os and cervix, are much less frequently the cause of constitutional suffering and of serious disease in the female sex, than they are reputed to be by many of our leading authorities on the maladies of women, yet, in respect to, more especially, inflammation of the uterine neck and orifice and of its cervical canal, the frequency of its occurrence is unquestionable, and to it must be referred most, if not all of the local and functional disorders of the uterus, and these, in their reactions on the organs of digestion, hæmatosis and nutrition, and on the nervous centres must be considered, if not the immediate, at least a frequent indirect cause of disease in remote parts. We have the most unquestionable evidence that the inflammatory conditions of the uterus and of its neck induce gradually a state of debility and anæmia, and of deficient vital energy which must necessarily impair the general health and comfort of the female organism, and, at the same time, render her especially prone to the attack of intercurrent disease.

Dr. Eve, in the report before us, confines his remarks strictly to simple inflammation and ulceration of the os and cervix uteri. He avows himself as of the party of those who believe that inflammation of these parts, with or without ulceration, is "of *very frequent* occurrence," and without invoking the corroborative support of those who entertain views similar to his own, he does not hesitate to express the opinion, based upon his own observation and experience, that inflammation of the uterine cervix and its sequelæ are of great pathological importance, whether considered locally or generally; in their bearing on the uterus itself, in its different conditions, unimpregnated, pregnant, and parturient, or in their effects on the general system, exciting, by nervous communication, disease in other and often distant organs.

"It must be admitted," Dr. Eve states, with much candor, "that inflammation, and even ulceration, sometimes exist for a long time, without materially affecting the general health, or in a great degree deranging the functions of the uterus; for we meet with cases in which menstruation continues with surprising regularity, as respects time, quantity, and freedom from pain, without causing sterility, or inducing abortion, and in which the general system does not appear to be cognizant of the local suffering, the disease being only evinced by symptoms referrible to the uterus itself; but these are exceptional cases."

But, in the greater number of instances, it is not, he believes, because of their little pathological importance, or the want of clear and prominent symptoms indicative of their presence that the disordered states of the uterus are so often overlooked, but that the failure to recognize them is altogether due to the ignorance or carelessness of the practitioner; the sufferings and death of the patient never having been traced to the proper cause, nor the influence that uterine disease may have exercised in rendering other diseases more serious and often mortal, having been overlooked entirely or not properly appreciated. In which sweeping accusation of ignorance and carelessness, are included more than one whose general professional talents, closeness and accuracy of observation and honesty of purpose have heretofore been unimpeached.

In respect to the treatment of inflammation of the cervix uteri and its results, Dr. Eve states that, for many years, while his reliance was almost exclusively on medical treatment, with the prescription of vaginal injections, blisters, cups, etc., to the sacrum and loins, his success was only partial and very unsatisfactory; whereas, since he has adopted the medico-chirurgical treatment, as it has been termed, cases of simple inflammation and ulceration of the cervix uteri are encountered by him with more confidence and certainty of cure than are any other cases of chronic disease; "their recovery being only regarded as a question of time, depending on proper perseverance on the part of the patient."

"When the inflammation is at all acute, scarification of the cervix, externally or internally, and the direct application of leeches, are of the very first importance, and general antiphlogistic treatment avails much; also, soothing and sedative lotions, and revellents to the sacrum and the hypogastric and inguinal regions. But when the inflammation is chronic, especially when there is ulceration, nothing, in my opinion, can be so effectual," Dr. Eve avers, "as the application of the milder caustics directly to the inflamed or ulcerated surface."

He prefers the solid nitrate of silver, in larger sticks than usually found in the stores, applied by means of the speculum forceps, through a speculum, to the cervix externally, and introduced directly into the cervical canal. The application being repeated every six, seven, or eight days, avoiding menstrual periods, and two days before and after.

In the intervals between the applications of caustic, Dr. Eve directs astringent vaginal injections, two or three times daily, consisting of a solution of alum alone, or with tannin, or in sage tea. He considers the sulphate of zinc also an excellent astringent, and when there is much irritation, Goulard's extract, diluted, or a solution of morphia in flaxseed tea.

These vaginal injections, he advises to be administered to the patient when on her knees and breast. In this position of the body, the womb, if prolapsed, returns, he remarks, to its natural situation, as soon as air is allowed to enter the vagina, which is in a corresponding degree lengthened and capacitated to hold a larger quantity of the lotion, which may be retained as long as desired, by the patient pressing a napkin firmly against the vulva previously to lying down. If she be too weak to assume or maintain the above position, we are directed to elevate the patient's pelvis by means of a pillow. When the injection is administered to the patient whilst she is in a sitting or lying position, only a very small quantity enters, and this passes directly out—doing comparatively very little good.

One great advantage in the treatment of inflammation and ulceration of the cervix uteri by cauterization is, Dr. Eve remarks, that it allows the patient to take active exercise in the open air regularly and systematically, which is essential to the restoration of her general health and strength, and without attention to which, local affections, generally, are not treated to the best advantage.

"When," says Dr. Eve, "the patient's general health is in all respects good, her sufferings altogether local—local applications are found sufficient alone, without general treatment; but," he adds, "there are very few cases of long standing without some complication, demanding medical prescription. The perfection of practice in these affections consists in the happy blending of medical and surgical treatment. Our limits will not allow us to say much on the subject of the medical treatment. It consists in the adoption of such measures as may be indicated for the removal of sympathetic or concurrent diseases in other organs, and the improvement of the general health of the patient, as through the blood, and in the administration of those remedial agents which may, through the system, act locally on the uterus. For the fulfilment of the first indication, may be called in requisition tonics of all kinds, especially the chalybeates and vegetable bitters, mercurials, laxatives, antacids, nervine stimulants, the regulation of diet, of exercise, and indeed whatever is calculated to improve health and increase strength."

Although our experience has not led us to believe that inflammation and ulceration of the os and cervix uteri are of quite so frequent occurrence, and, consequently, that their pathological importance is near so great, as is asserted by Dr. Eve, we have, nevertheless, perused the report before us with no little pleasure; we have been much gratified at the general good sense, and sound practical views which pervade it, and the gentlemanly tone observed by the author in commenting upon the views of those who hold different views from him, as well in respect to the facts themselves as to the pathological and the therapeutical deductions which legitimately flow from them. D. F. C.

Art. XXIV.—*Observations on Malarial Fever.* By Joseph Jones, A. M., M. D., Professor of Physics and Natural Theology in the University of Georgia, Athens; Professor of Chemistry and Pharmacy in the Medical College of Georgia, Augusta, etc. etc. 8vo. pp 84. [From the *Southern Medical Journal*, 1858.]

If we apprehend correctly the object of these observations, it is to present a series of cases of malarial fever, in which such an exhibit and analysis of the morbid phenomena of the disease is attempted, as will show the derangement of each of the several normal constituents of the human organism, and the changed relation it occupies with each of the other constituents—the disturbance in the relation of the vital with the physical and chemical forces of the body, and, also, a comparison of the several morbid phenomena with the meteorological, geological, and topographical conditions in which the several patients are placed. To present, in other words, in each stage and change of the disease, the condition of the blood, and of the urine, bile, and other secretions and excretions, as determined chemically and microscopically, with the state of the animal temperature, and of the functions of all the organs of the body during life, and with an accurate investigation by chemical analysis and microscopic examination after death of the different tissues and organs, and of their respective products. Taking note at the same time of all the external conditions under which the patients are placed, prior to, and at the time of their seizure, and during their treatment; with the changes produced in the condition of the functions of the organism, and in the state of the blood, and of the different secretions and excretions, by the remedies prescribed.

Dr. Jones has thus laid out for himself a task, as magnificent and important as it is difficult and laborious. A task, which he himself admits, no one investigator can have either the time, the opportunity, or the requisite talents faithfully and satisfactorily to accomplish, and which must be left to the united labours of a host of observers having at their disposal all the circumstances essential for its successful prosecution.

If, Dr. Jones remarks, it were undertaken by a corps of intelligent, honest, and industrious observers, acting with zeal and unity, while each devoted himself to the careful examination of a single branch in the vast field of inquiry suggested, the results for medical science would be of the most momentous character. It would be made in time to rank among the exact sciences—and instead of the frequent discrepancy now often observed to exist between theory and practice, we should have harmony, and in the mind of the physician doubt and uncertainty would give way to confidence, derived from a clearer insight into the nature of the morbid conditions to be prevented or overcome in each case of disease, either threatened or present, and the means by which its prophylaxis or cure is most certainly to be accomplished.

Such, if not expressed in his exact words, are the anticipations entertained by the author of the benefits to be conferred on pathology and therapeutics by a series of investigations such as he suggests. We admit that from these much light could not fail to be shed upon the pathology of disease, and many important data derived upon which to base a correct and systematic therapeutics.

Investigations of the scope and character of those proposed by Dr. Jones, will, however, not only require numerous observers for their successful prosecution, but time and opportunity for their multiplication in all the varied circumstances under which disease may present itself, and, also, for their careful collation in order to correct the mistakes which are so liable to creep into the examination of questions of so complicated a character as those connected with the true relationship between the various abnormal states of the several fluids of the body, and the particular abnormal conditions of the different tissues, organs, and functions, pathognomonic of the existing disease. Still, vast, tedious, and difficult as is the proposed series of investigations, there is no reason why we should despair of their final accomplishment. Let each one lend, as Dr. Jones has done, his aid, and thus, from the contributions furnished by many labourers, much may be obtained. Although we cannot, with Dr. J., hope that, by the results alone of these investigations, however carefully and faithfully executed, medicine will be rendered an exact science, still, we are willing to admit that the influence they are calculated to exercise in respect to it will be of a most beneficial and momentous character.

We cannot anticipate from the most extended, exact, and multiplied series of microscopic examinations and chemical analyses of the fluids and solids of the body during life, and subsequent to death, any satisfactory revelations in respect to the nature and cause of disease, and the means best adapted to stay its progress, and conduct it to a favourable termination. As Dr. J. correctly remarks, the proper and regular exercise of the vital force of the human organism is associated with a certain constitution and condition of the matter of which that organism is composed. So that, whatever interferes with the normal constitution and condition of the material elements of the system must necessarily interfere also with the normal operation of the vital force—permitting a further and more extensive derangement to occur in the chemical condition, and relative proportions and reactions of the material elements of the organism—in the physical forces with which it is endowed, and in the manifestations of its intellectual and moral functions. We dare not deny that the aberrations in the vital and nervous actions which constitute the most prominent of the phenomena of disease may, in many instances, be the result of preceding derangements in the physical condition of the blood and of the organic matter of which the body is composed: under such circumstances, microscopic and chemical investigations will, it is reasonable to suppose, lend us valuable aid in our inquiries into the nature and starting-point of the morbid actions that present themselves; but, it is to be recollected that there are many facts which would seem to indicate the first impression of the morbific agent to be made, in the majority of instances, primarily upon the nervous system, disturbing first, the vital forces of the system, and, secondarily, the functions of the various organs, and the condition of the solids and fluids which enter into their composition. Here, it is evident, that our microscopic and chemical investigations—however much light they may throw upon the extent and character of the results of diseased action, are entirely valueless as guides to the nature and operation of the actual cause of the morbid conditions that are detected.

In all our investigations into the pathology of disease, we must keep prominently in mind the fact that the human organism is endowed with vitality—and that by this vitality the action upon it of whatever morbific agents it may be subjected to, is, to a certain extent, modified and controlled. That even in those cases in which we have the strongest reasons for attributing disease to the introduction into the fluids or solids of the body of foreign matters, it is still, nevertheless, true, that the derangements throughout the system to which these give rise—in other words, the entire series of morbid phenomena do not result from the change produced by them in the organic condition of the solids, or the modification they occasion in the crasis of the fluids, but from the disturbance they directly or indirectly cause in the operation of the vital forces. It is not inaccurate, therefore, to assert that, in all cases, disease is the result of abnormal impressions upon the nervous system, causing aberrations to a greater or less extent in its actions; aberrations of the nature of which we can learn nothing by subjecting any one or all the fluids or tissues of the body to microscopic or chemical examination.

The observations of Dr. Jones, as detailed in the publication before us, relate chiefly to the condition of the urine in malarial fever—compared with the state of the skin, the pulse, the respiration, the temperature of the surface, and of the atmosphere, and with the several stages and periods of the disease, and the nature of the treatment pursued. They indicate a commendable amount of industry and habits of cautious investigation in the author. They may be consulted with profit, notwithstanding it would be premature to adduce any general conclusions from so limited and imperfect a series of cases.

D. F. C.

Art. XXV.—*Pathology and Treatment of the Paralysis of Motion.* By J. P. Batchelder, M.D., New York. 8vo. pp. 62. 1858.

We are not very positive that we perfectly comprehend, even in its general outlines, much less in its entire details, the pathology of paralysis as laid down by Dr. Batchelder in the essay before us. Paralysis, he defines to be "the symptom of a disease which mainly affects the voluntary muscles, or the muscles of animal life. The non-communication of the appropriate stimulus to these muscles by the mind constitutes the disease of which paralysis is the symptom."

So far as we are aware, paralysis of motion can result from only one of two causes: 1st. From a simple interruption of the nervous influence—an obstruction or destruction of the road by which the changes leading to sensation travel in the one direction, from the circumference to the centre; and the mandates of volition in the other direction, from the centre to the circumference—that is, a simple interruption, or a complete breaking up of the connection between the nervous centre and the paralyzed muscles; or 2dly. From such a change in the condition of the paralyzed muscles as renders them incapable of feeling or responding to the impulse of the will.

The muscles, when thrown into inactivity from either of these causes, become atrophied and more or less modified in structure, in consequence of which paralysis of motion may continue long after its primary cause has been removed or ceased to operate—the motive power of the affected muscles being impaired as well as their subordination to the control of the will.

Dr. Batchelder would seem to believe that the persistence of the paralysis of motion, after the removal or cessation of its primary cause, is not due simply to the change in the organization and physiological condition of the inactive muscles, but mainly to the fact that the patient, "having been quiescent for a time, becomes acquiescent from habit, and will not make the slightest effort to move his limbs—indeed, insists that he cannot do it—that it is impossible."

Dr. B. denies that the control of the will over the muscles of animal life is an inherent faculty of the mind, but maintains that it is an acquired one, and, consequently, one that may be lost by disuse; and when lost must be reacquired by a course of training, almost in the same manner that it was acquired in the first instance by the infant. In all that appertains to volition in respect to motion, his doctrine is, that the paralytic must be re-educated.

If we rightly understand Dr. B., he places the primary cause of paralysis in the peripheral extremities of the motive nerves—in what he denominates "the peripheral brain." The nerve-fibres, he tells us, at their origin in the brain and spinal marrow, and also at their distal terminations, are enveloped with the neurilemma. At their distal extremity the ultimate nerve-fibres, and the branches or primitive fibres into which these break up, mingle with the substances by which they are surrounded, and with which they are in immediate contact. The unenveloped termini, sensific or motific, according to the nerves of which they form a part, constitute what Dr. Batchelder denominates the *peripheral* brain, which, he remarks, manifests itself quite independent of its congener, the central brain.

"For example: The heart of a frog, some minutes after exsection, is made to palpitate by pricking it with a needle—thus furnishing undeniable proof that the portion of nerves, intermingled with its fibres, possesses the power of feeling and also of motion. Perception is the function performed at the extremity of the nerve by the peripheral brain. The change there produced is communicated, telegraphically if you please, to the central brain, by which a change is there effected that is productive of thought. The first change is modified by the physical or other properties peculiar to the cause; which modification is likewise communicated to the brain proper, in which a corresponding modification of change is produced; in consequence of which an idea of the character and nature of the cause is induced. When these operations have been performed a number of times, the individual acquires the power of reproducing, by a voluntary effort, the identical change in the cerebrum, which is followed by the same change as formerly in the peripheral brain; and thus, by an effort of the will, he can re-excite the idea of the agent which originally caused the aforesaid operations, &c., whether they be sensitive or motive."

In describing the premonitory symptoms or inceptive stage of paralysis, Dr. B. says, in regard to the sense of numbness, that, as a premonitory symptom, it *primarily* affects the peripheral brain, and is an indication that the ultimate nerve-fibres, in the part where it is experienced, are compressed. This compression he considers to take place in the following manner: The capillary vessels of the part having, from some cause or other, become less susceptible to the stimulus—that of distension only, perhaps—of the fluids they circulate, do not resist, but yield to the ingressive impulse of those fluids, until they become so distended as to compress the peripheral nervous termini, and cause the numbness or obtuseness of feeling referred to.

In the same manner he accounts for the production of the sense of drowsiness.

"The first link in the chain of causation is, as has been suggested, an unequal distribution of blood to the ultimate or distal nerve-fibres—peripheral brain—which compresses them; and the next, compression of the proximal extremities of the fibres of the same nerves. If any of the capillary vessels, meandering in the vesicular substance of the encephalon, give way, hemorrhage and apoplexy result."

Nearly all the positive as well as premonitory symptoms of apoplexy and palsy, whether of sensation or motion, have, Dr. B. declares, their seat in the nervous termini which constitute the peripheral brain. The premonitory coldness, numbness, drowsiness, prickling, and formication, are sent, he supposes, by way of admonition; the twitchings, cramps, and spasms, as solemn intimations that the real attack is near at hand.

"Those involuntary movements are, moreover, the suggestions of nature," he remarks, "as to what ought to be done; that the patient should, without delay, have recourse to exercise; that whenever any of these premonitions are present he should exert a limb with energy, instead of rubbing or having it rubbed, as is usually done. He should be advised of his danger, and assured that the course suggested will not only put a stop to the unpleasant feelings, but prevent the accession of the disease of which they are the precursors and heralds."

If Dr. B. is to be understood as asserting that the primary lesions which give rise to the positive as well as the premonitory symptoms in all cases of paralysis and apoplexy, are seated in the distal termination of the nerves, or what he denominates the peripheral brain, he is certainly not borne out by the facts developed by the pathological anatomy of the two diseases; nor is he sustained by any series of accurate observations if he means simply that the remote and exciting causes of paralysis and apoplexy act primarily upon the peripheral extremities of the nerves.

That in certain forms of paralysis, as that from the long-continued action of cold, and, perhaps, also, from the poison of lead and some other special causes, the peripheral termini of the nerves may be those primarily and mainly affected, is possibly true; but that, in the great majority of instances, paralysis of motion and of sensation is the result primarily and solely of lesions seated in the nervous centres, seems to us to be a fact so well established as to be beyond the possibility of a doubt; but, as Dr. B. has simply announced his theory in respect to the pathology of paralysis without adducing any evidence in its support, we shall defer any examination into its validity until such time as we are put in possession of the facts and arguments upon which it is based.

The general outlines of the treatment of paralysis growing out of the physiological and pathological views advocated by Dr. B. are thus defined—

"In paralysis, the muscles are, as suggested, seldom wholly destitute of contractility, but the patient has lost the will and the power of making them contract. The doctrine, then, which forms the basis of our theory and treatment too, is, that the paralytic must again learn to use his limbs just as he learned to use them in infancy; but as he cannot begin, as did the infant, to move them, and as nature, having once performed her task, refuses to renew her labours, we must, therefore, substitute our own hands, for hers, and move his limbs as she moved them at first, and like her invoke and direct his attention to the motions thus effected. We must, indeed, go further and endeavour to induce him to co-operate with and assist us in the work. While moving his limbs we should try to concentrate his attention upon the principal muscles by which the motions we are causing to be made are naturally executed, and urge him to make those muscles contract. A good way of doing this is to place his hand over the muscles in our own limb which we wish to have brought into play in his, and make them contract with force. This expedient may be likewise resorted to in his own unaffected members, * * * and the patient exhorted to attend to the operations of his own mind, as well as to the movements of his limb. He may likewise be requested to fix his attention on the affected limb, and consider what he desires and intends to do, and what he must actually do in order to make this limb imitate the movements of the other."

In a paralysis of some duration the muscles are not simply powerless, but some are too strongly contracted, while others, neither powerless nor contracted, are ready to act, not in obedience to the will, but in opposition to such muscles which can and do act somewhat in accordance with the patient's volition. Hence in every chronic case of paralysis the indications are to restore strength to the powerless muscles; to overcome abnormal contraction in others; and to obviate or counteract the irregular action of a third set, and, finally, to renovate the will, and reconnect it with the affected muscles.

We do not propose to enter into a consideration of the particular means—all of a physical—mechanical character, by which Dr. B. proposes to accomplish the foregoing indications. In cases of long-continued paralysis they are all unquestionably adapted to accomplish the ends for which they are proposed. This the cases detailed by Dr. B. would seem very clearly to prove. They cannot, with any propriety however, be received as remedies for paralysis, they can only effect the removal of that condition of the muscles which is in most cases consequent upon the paralysis, and which remains after the immediate cause of the paralysis has been removed. So long as the cause by which the nervous communication between the affected muscles and the nervous centre is interrupted or suspended, continues, the remedial measures proposed by Dr. B. must necessarily be powerless. And in those cases in which the paralysis is the result of an entire disruption of the nervous connection of the muscles with the brain—the instrument of the will—it must be evident that so long as that disruption continues no means directed to the palsied limbs, no mental efforts on the part of the patient, no system of gymnastic education, will succeed in restoring the dominion of the will over the disabled muscles. If the nervous lesions are irreparable, the paralysis, do what we may, will be permanent.

It is very probable that, in certain cases, the inceptive phenomena of an attack of paralysis may be removed, and the attack prevented by well regulated muscular exercise. It appears to us, however, that such cases must be very limited in number, and, of course, of unfrequent occurrence. Dr. B. desires to speak of the efficacy of exercise for the removal of the premonitory symptoms of a paralytic seizure, "somewhat emphatically and positively," from having found it, during a long and tolerably extensive practice, uniformly successful when connected with other proper hygienic measures. D. F. C.

Art. XXVI.—*A Report upon some of the more Important Points connected with the Treatment of Syphilis.* By Holmes Coote, F. R. C. S., &c. London, 1857. Octavo, p. 141.

In this report, Mr. Coote gives his own experience upon the subject of venereal diseases; abstaining, as far as possible, from quoting the opinions of others. He endeavours specially to prove "that syphilitic sores owe their distinctive characters to the action of the poison on particular tissues; that there is but one poison, which may produce any of the varieties of secondary or constitutional symptoms; and that the occurrence of bubo, whether suppurating or not, has no influence upon the constitutional effects." These doctrines of Mr. Coote have the advantage of simplicity, and what is more, of greatly facilitating the treatment of syphilitic affections. Unfortunately, however, they are not legitimately deducible, at least in our opinion, from the phenomena he has himself witnessed and recorded, and their truth is, certainly, totally irreconcilable with what has been observed by others.

The contents of this publication are divided into eight chapters, which have these headings: Introduction, Blennorrhagia and Gonorrhœa, Primary Syphilis, On Inflammation affecting Syphilitic Sores, On Diseases Resembling Syphilis, Secondary Symptoms, Tertiary Syphilis, Infantile Syphilis.

In the introduction, after professing his inability to offer any suggestions respecting the exact mode of origin of the venereal disease, Mr. Coote declares it to be his belief that chancre is the effect of promiscuous sexual intercourse; that it is engendered by the mode of life to which prostitutes are exposed. This appears to him—and his mode of expression is rather strange—"to be the only explanation of the ubiquity of syphilis throughout all nations, in the enjoyment of the present customs of civilization." More than this, he believes that the filthier the habits of prostitutes, the more severe the disease they communicate (p. 7), which is somewhat at variance with the statement in the preface, "that there is but one poison which may produce any of the varieties of secondary or constitutional symptoms."

The grounds given by Mr. Coote as those upon which he founds this belief as to the origin of syphilis are by no means satisfactory. For instance, he states that when in Asiatic Turkey, he knew several of the medical officers of a large encampment of native cavalry, who informed him that primary venereal sores about the anus were frequent among the men. He says: "The question arises, whence came this poison? Was it introduced by some one who contracted the disease from a female? This is the most ready solution of the question; but then it is destitute of proof, and the difficulty of access to women in the east is proverbial." Most persons, contrary to Mr. Coote, must prefer what he calls, the most ready solution of the question. As to the difficulty of access to women in the east, some of the recent publications in regard to Bishop Gobat and the Jerusalem Bishopric, show that it is far from possible to consider it at all in the matter. One of the bishop's protégés, Hanna Hadout, lived by prostituting his mother and sisters, and by competent English medical men, his two first wives are declared to have died from the effect of excessive prostitution.

At the present day, syphilitic sores are no more generated by filthy habits, than maggots by putrid flesh. Syphilis is always transmitted, it is never spontaneously developed.

After concluding as to the origin of the syphilitic virus, Mr. Coote asks by what channels it is conveyed into the system; whether it is taken up by the absorbent vessels, or mixes immediately with the current of blood in the veins. In considering this question, on the occasion of a certain experiment performed upon the intestine of an animal, Mr. Coote states that the "thoracic duct, which receives the contents of the lacteals, does not in all probability convey into the venous system the whole amount of digested food, but only the more highly organized constituents. The saline and some fatty material is supposed to be removed by the veins." There is surely no occasion of thus assigning fanciful functions to certain organs, functions which any one acquainted at all with physiology knows to be erroneous, in order to conclude that the absorption of syphilitic virus is made by the lymphatics. Experiment shows that it is carried by them as far as the first ganglions which correspond directly with the chancres; and never any further, as *primitive* pus. This should be sufficient, and fanciful notions on the subject, as arguments, are not required.

In Chapter II., upon Blennorrhagia and Gonorrhœa, there is nothing remarkable, except the opinion that gonorrhœa is a constitutional affection. This opinion is founded mainly upon a case which came under Mr. Coote's notice. A prisoner was admitted into the City Bridewell suffering from gonorrhœa, which he had contracted a fortnight before his imprisonment. Under the use of the copaiba mixture and a weak solution of sulphate of zinc, the discharge disappeared in about three weeks, when he went to full work upon the treadmill. A superficial non-indurated venereal sore soon appeared upon the integuments of the under surface of the penis. It healed under the usual treatment. Now it is obvious, Mr. Coote says, that the man could not have exposed himself to contagion for at least three weeks—probably not for five—and whence came the poison which had produced the ulceration? He declares that he "is inclined to regard it as an illustration of Hunter's doctrine—that two constitutional diseases do not readily go on together" (p. 32). It is really extraordinary, notwithstanding the many instances every day witnessed of strange opinions and queer deductions, to see it argued thus that gonorrhœa is a constitutional disease.

The rest of the work, as is seen by the list of contents already given, treats of primary and constitutional syphilis. We learn from its study that Mr. Coote believes that secondary symptoms can be communicated from one person to another in other ways than by a primary sore, or by fecundation, that he believes in buboes *d'emblée*, that he knows of no relation between the occurrence of bubo and the frequency of secondary syphilis, and that indurated and non-indurated sores are all equally liable to be followed by constitutional effects. Now all these things have been shown to be erroneous, by what, to our minds, is irrefragable testimony; and we see nothing whatever in Mr. Coote's statements to shake our own opinions.

There are what might be styled opinions of the will; which, in spite of everything, a man holds because it is his wish to do so. Of them, one can truly say, "quod mavult credere homo, id credit." In such cases it is useless to argue. The old lines are very true,

A man convinced against his will,
Is of the same opinion still.

In his *advertisement* Mr. Coote professes to be acquainted with the opinions expressed by other writers upon syphilis, and to have perused their works with interest. Under such circumstances we must express some astonishment at his opinions, but we believe that there is no use in again discussing them.

W. F. A.

ART. XXVII.—*Journal de la Physiologie de l'Homme et des Animaux* Publié sous la direction du docteur E. BROWN-SÉQUARD. Tome premier, Avril, 1858. Paris: J. B. Baillière et Fils; Londres et New York: H. Baillière.

THIS, the second number of the *Journal de la Physiologie*, fully sustains the very favourable opinions which greeted the appearance of the first. Dr. Séquard, its able and industrious editor, is evidently determined to make his Journal the vehicle of much that is both new and valuable in physiological science, and thus render it an indispensable addition to the library of every scientific practitioner of medicine.

Until within a very few years, it has been the custom to regard pure physiology as a science more speculative and theoretical than substantial and practical; fuller of crude and fanciful notions than of important and well-established facts; and, consequently, as of little or no practical use to the healing art. Those, however, who have most narrowly inspected the toilsome course of modern physiology, from the time of Haller and Harvey, its justly reputed fathers and founders, down to the present day, know that it has been steadily progressive, constantly accumulating numerous and highly valuable facts, the true nature and relations of which have, in many instances, been thoroughly determined, and a positive step thus made towards the establishment of the fundamental principles or laws of the science. As a necessary result of this progression, physiology is, at the present moment, specializing itself in another direction. It is assuming, in fact, the character of an applied science, and practical physicians of all countries, with a daily increasing confidence in its capabilities, are hopefully looking to it to illuminate their empirical and uncertain course, and dissipate the doubts which hover, fog-like, about their path. The importance, indeed, of applying physiological facts to the elucidation of the complex problems of pathology is slowly but strongly attracting the earnest and respectful attention of the profession. This we regard as a healthy sign. It indicates that the *ars medendi*, after wearily marching and counter-marching for 2000 years, has, at length, discovered the only path which is capable of conducting it to its appropriate place in the circle of the exact sciences. Indeed, we firmly believe, and this belief we have elsewhere maintained, that theoretical and practical medicine can never become a rational, philosophical system, unless it be based upon a strictly scientific physiology, whose numerous and complicated phenomena have been carefully generalized in accordance with the inductive method, and reduced to a few simple laws or expressions. The increasing interest in physiology, daily manifested by the so-called practical men of the profession, is stimulating to renewed exertions those patient and laborious investigators who have so nobly devoted their lives and brilliant talents to the advancement of their favourite science. The foundation, in 1849, of the Société de Biologie of Paris, the existence of similar institutions in different parts of Europe, especially in Germany, the creation of a Biological Department in the Academy of Natural Sciences of Philadelphia, and the establishment of the Journal before us, devoted entirely to the interests of physiology, are some of the proofs of the growing estimation of the importance of this science.

The present number of the Journal contains thirteen original memoirs, contributed by MM. Brown-Séquard, Bernard, Robin, Blondlot, and others; the usual analysis of new books; translations from the English and German; extracts from the journals, and a brief *appréciation* of the progress of physiology.

The titles of the memoirs are as follows:—

1. Researches upon the Causes of Death occurring after the Extirpation of that part of the Medulla Oblongata which has been called the Vital Point. By Dr. E. Brown-Séquard.

2. Upon the Variations in Colour of the Venous Blood of the Glandular Organs, according to their condition of functional activity or repose. By Prof. Cl. Bernard.

3. Note upon the Influence exercised, in certain Cases, by the lateral half of the Spinal Marrow, upon the corresponding half of the Encephalon and Face. By Dr. E. Brown-Séquard.

4. The Origin of Sugar in the Animal Economy. By A. Sanson.

5. Researches upon the Action of different parts of the Solar Spectrum upon Vegetables. By Dr. C. Guillemin.

6. Limits to the Possibility of the Spontaneous Return of Cadaveric Rigidity, after it has been destroyed by Elongation of the Muscles. By Dr. E. Brown-Séquard.

7. Note upon some Points in the Anatomy and Physiology of the Red Globules of the Blood. By Dr. Ch. Robin.

8. Upon some Facts which appear to show that several kilogrammes of Fibrin are formed and transformed, every day, in the Body of Man; and upon the Seat of this Production and Transformation. By Dr. E. Brown-Séquard.

9. New Researches upon Digestion. The Acid Principle of the Gastric Juice. By M. Blondlot.

10. Researches upon the Erectile Organs of the Female, and the Tubo Ovarian Muscular Apparatus, with their Relations to Ovulation and Menstruation. By Dr. Ch. Rouget. (With three plates.)

11. Upon Tactile Sensibility, and a Method of Measuring it, in Anæsthesia and Hyperæsthesia. By Dr. E. Brown-Séquard. (With a wood-cut.)

12. Note relative to the Existence of Sexual Generation among the Infusoria. By Dr. E. G. Balbiani. (With a plate.)

13. Experimental Researches upon the Physiological Properties and Uses of Red and Black Blood, and their Principal Gaseous Elements—Oxygen and Carbonic Acid. By Dr. E. Brown-Séquard.

All the above memoirs are well worthy of careful perusal. Our limits, however, permit but a very brief reference to their contents.

It is well known to physiologists that some years ago M. Flourens announced, as one of his most important discoveries, that the removal or destruction of the pen-like point of the very small triangular or V-shaped piece of gray matter bounded by the posterior pyramids and restiform bodies, and known to anatomists as the calamus scriptorius, is followed immediately and invariably by the cessation of respiration and vital activity. This spot, scarcely a line in extent, he calls the vital point or knot (*le point* ou *la nœud vital*) of the nervous system; and he regards it as the nervous centre of respiration—the seat, in fact, of the vital principle. In the highly interesting paper which heads the above list of memoirs, Dr. Séquard attempts to show that death is not always the immediate consequence of the destruction or removal of the *point vital*. On the contrary, he assures us that, after the operation, respiration, circulation, intelligence, co-ordination of voluntary movements, perception of sensations, &c., are maintained, very often, for a considerable length of time, there being sufficient life left, under these circumstances, for each part or organ to perform its appropriate function. Death resulting from the experiment he attributes neither to the sudden nor the gradual extinction of the vital force, but to the cessation of the heart's action, the arrestation of the respiratory movements, pulmonary emphysema, and the entrance of air into the veins during the performance of the experiment. Dr. S. informs us that the sudden arrestation of the cardiac movements, consequent upon the ablation of the *vital point*, may also be produced by sending a galvanic current through the medulla oblongata and the par vagum. In both these cases, all contraction ceases, and the heart remains passive, being dilated by the influx of blood only. Sudden destruction of the medulla oblongata in the batrachia renders the heart inactive for some time. The same effect may be produced by a reflex action, originating in the great sympathetic, and passing successively along the medulla spinalis, the medulla oblongata, and the pneumogastric nerve. Now, in all these cases, Dr. S. thinks that the stoppage of the heart is essentially due to a direct or indirect irritation of the vagus. That it is not attributable, as Flourens thought, to the mere absence of the *nœud vital*, appears to be shown by the fact that, in the anencephalous fœtus, deprived of the medulla oblongata, the heart may beat for many months; and in the batrachia, it will beat with energy and regularity for more than eight months after the removal of the nervous centre which includes the vital point. On the other hand, that it is the irritation of the parts in proximity to this point which produces the cardiac phenomena in question, appears from the following facts, viz: 1. That the simple pricking of these parts suffices sometimes to diminish suddenly the force and rapidity of the heart's movements; and 2. That, in a mammifer in which the par vagum is divided, the movements of the heart are never suddenly arrested nor enfeebled by the destruction or removal of the vital point.

In 1853, MM. Bernard, Budge, and Séquard communicated to the *Société de Biologie*, the important fact that the application of galvanism to the par vagum arrested the movements of respiration. Dr. Séquard has also frequently witnessed a suspension of these movements produced by simply pricking the medulla oblongata near the vital point. Hence he concludes that the obstructed respiration consequent upon the extirpation of the vital point is due, not to the absence of this small piece of gray neurine, but to the irritation of the medulla produced by its removal.

A third cause of death after this operation is the entrance of air into the veins of the neck, which are frequently opened by the experimenter in laying bare the medulla oblongata. In those animals that die immediately after the operation, the cause of death appears to be the pressure of coagulated blood upon the medulla and the pons Varolii. The fatal termination in nearly all these cases is hastened by pulmonary emphysema and the accumulation of large quantities of frothy mucus in the trachea and bronchial tubes.

It is highly interesting to observe in this connection, and the observation derives importance from its practical bearing, that in cases of sudden death, resulting from powerful mental emotion, a violent blow on the abdomen, or the rapid introduction of very cold water into the stomach, the accompanying phenomena are often precisely like those which supervene upon the ablation of the *nœud vital* in animals. In the latter case, the cause of death originates in the medulla oblongata; in the former, it is propagated to this part of the nervous system from the periphery or the brain itself.

From his experiments and observations upon this interesting subject Dr. Séquard arrives at the following conclusions:—

1. That death is not always the immediate result of the extirpation of the *nœud vital.*

2. When death takes place suddenly, after such extirpation, it is partly due to the sudden arrestation of the cardiac movements—produced by the irritation of the medulla oblongata.

3. The irritation of the parts contiguous to the vital point like the removal of the latter, arrests or enfeebles the action of the heart.

4. After section of the par vagum, extirpation of the vital point never occasions the sudden cessation of the heart's motion.

5. The cessation of the respiratory movements which sometimes follows the extirpation of the vital point, results not from the absence of this point, but from an irritation of the medulla oblongata.

6. Irritating the nervous tissue surrounding the vital point sometimes retards respiration, although this point is not itself injured.

7. Respiration and circulation may continue strongly and regularly for very many days after the ablation of the vital point. This point is, therefore, neither the original seat of a so-called vital force, nor the primary motorial centre of the mechanics of respiration.

8. Voluntary movements and the sensorial functions often persist after the extirpation of the *nœud vital.*

9. The vital point appears not to be essential to life.

The paper of Cl. Bernard, on the variations in the colour of venous blood, was read before the Academy of Sciences, of Paris, in January last. A translation of it has already been given to our readers in the preceding number of this Journal (p. 497).

In the third article, Dr. Séquard attempts to show that division of the lateral half of the spinal marrow influences considerably the encephalon and certain parts of the eye and skin of the face upon the corresponding side, in a special and as yet unexplained manner.

M. Sanson, in the fourth memoir, treats us to a summary of the present state of our knowledge concerning the existence and formation of sugar in the animal economy. He discusses critically the conflicting views of Bernard and Figuier, and details a number of experiments which lead him to conclusions, as to the origin of glucose, directly opposed to those of Bernard.

In the next article, M. Guillemin records the interesting results of his attempts to determine experimentally, 1, the influence of different parts of the solar spectrum upon the formation of chlorophylle; and 2, the action of the calorific, luminous and chemical rays upon the direction of the stems of plants.

M. Robin's paper, upon the "Blood-corpuscles," and those of Brown-Séquard on the production and transformation of fibrin in the human body, and the physiological properties and uses of red and black blood, are especially worthy of attention.

Blondlot still maintains that biphosphate of lime is the acid principle of the gastric juice. His paper is virtually a critical examination of the method of procedure adopted, and the conclusions arrived at by Prof. F. G. Smith in his able article entitled "Experiments upon Digestion," published originally in this city, and afterwards reprinted in the first number of Séquard's Journal.

The excellent communications of Rouget on the erectile organs, and of Balbiani on the reproduction of infusoria, are illustrated with well executed lithographic plates.

In the bibliographical section of the Journal we observe with pleasure a brief but important notice of Dr. Dowler's Researches on Post-mortem Contractility, in which Dr. Séquard takes occasion to acknowledge the priority claimed by Dr. Dowler for the announcement of certain facts connected with post-mortem rigidity of the muscles. Although the physiological investigations of Dr. Dowler have long been familiar to the physicians of the United States, they are, as yet, almost wholly unknown to those of Europe. With equal pleasure, we find, under the head of "Translations," the paper of Dr. Isaacs, of New York, on the "Function of the Corpuscles of Malpighi," while in the *appréciation* of the progress of physiology, the scientific labours of no less than five American physicians are noticed. It will thus be seen that the *Journal de la Physiologie* is already, at this early stage of its existence, becoming an important channel for the introduction of American physiology into Europe. The long sojourn of its able editor in the United States, his intimate acquaintance with many members of the profession in this country, and his familiarity with the English language are qualifications well calculated to render his Journal the best European exponent of the labours of American physiologists. J. A. M.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *New Structure in the Spermatic Cord.*—M. GIRALDES describes certain tubular and vesicular bodies which he has discovered in the spermatic cord, and which he considers to be the remains of the Wolffian body of the embryo.

The structures in question, which he proposes to designate collectively by the term "Corps Innominé," form a small group, situated behind the tunica vaginalis, between that membrane and the spermatic vessels, and extending usually from the head of the epididymis as high as the point where the membrane is reflected forwards from the cord; sometimes, however, reaching much higher up; or, on the other hand, being more concentrated in the neighbourhood of the epididymis.

The "Corps Innominé" is found in the new-born infant, and in a more or less modified condition at all later periods of life; it has also been met with in the lower animals. To facilitate its detection and examination, the author has found it advantageous previously to render the surrounding tissues transparent, by macerating the spermatic cord in an acid solution, for which purpose he recommends the use of tartaric or citric acid in the infant, and of dilute nitric acid in the adult.

After this preparation minute whitish specks make their appearance in the situation above mentioned, which, when examined with the microscope, are found to be produced by small vesicles and convoluted tubes of varied and curious shape, surrounded by a plexus of small bloodvessels, which are distributed on their parietes. The tubes are short, tortuous, and for the most part beset with very unequal-sized and irregular varicose dilatations, and sometimes with short branches, ending in rounded swollen extremities. The vesicles are round or oval, like short closed segments of a varicose tube, and generally with irregularly protruding outline. The walls of both vesicles and tubes are formed of a fibrous connective tissue, and lined with epithelium; and they inclose a consistent but clear fluid, holding in suspension epithelium particles and transparent granules. This description applies to the condition of the structures in question, as found in the infant, and up to the age of from six to ten years; after this they begin to be atrophied, so that, although still present in the adult, they are usually less marked; but, on the other hand, they then sometimes contain a more consistent liquid, and are occasionally dilated, so as to constitute certain forms of cysts known to occur in the spermatic cord.

As already stated, the author regards the "Corps Innominé" as formed by the atrophied remains of the Wolffian body, and therefore comparable to the so-called "organ of Rosenmüller," which is found in the broad ligament of the uterus, and represents the vestiges of the Wolffian body in the female; and as certain vesicular productions in the broad ligament may take their rise from these remnants, so the author, as before remarked, has satisfied himself that the origin of some of the cysts of the spermatic cord may be traced to dilatation of the tubular elements of the "Corps Innominé" in the male.

The paper is illustrated by drawings, representing the objects in their natural size and situation, and also as seen under the microscope.—*Proceedings of Royal Society.*

2. *Normal Existence of Urea in Healthy Perspiration.*—Funcke confirms the normal existence of urea in considerable proportion in healthy cutaneous transpiration, a fact denied by Schottin.—*Moleschatt's Beiträge*, 1858.

3. *Accommodation of the Eye.*—Graefe describes a case of importance for the doctrine of accommodation—namely, a complete paralysis of all six muscles of the eyeball without diminution of the faculty of accommodation. In another case Gräefe observed a spasmodic condition of the apparatus of accommodation, finding it, after an injury to the eye, constantly in the state suited for near objects, with inability to see distinctly distant objects.—*Brit. and For. Med.-Chir. Rev.*, July, 1858, from *Gräefe's Archiv.*, vol. ii.

4. *Physiology of the Nervous System.*—Dr. Alex. Henry, in his abstract of the lectures recently delivered by Dr. Brown-Sequard on the physiology of the nervous system, gives the following general recapitulation of the main object which the author desired to prove:—

1. The gray matter of the cord is the principal channel by which sensitive impressions are conveyed to the brain.

2. The anterior columns have a share in the transmission of sensitive impressions.

3. Injury of one lateral half of the cerebro-spinal axis produces certain well-marked features, according to the following table:—

a. Injury of the brain produces—

On same side.	*On opposite side.*
Anæsthesia.	Normal sensation.
Paralysis.	Normal motor power.
Increased temperature.	Normal heat.

b. Injury at any point from the tubercula quadrigemina to the medulla oblongata above the decussation in the pyramids produces—

On same side.	*On opposite side.*
Anæsthesia.	Hyperæsthesia.
Paralysis.	No paralysis.
Diminished temperature.	Increased temperature.

c. Injury of the medulla oblongata at the crossing in the pyramids produces paralysis of motion on both sides; otherwise the symptoms are the same as in *b*, when the pons Varolii is injured.

d. Injury of the spinal cord on one side produces—

On same side.	*On opposite side.*
Anæsthesia.	Hyperæsthesia.
No paralysis.	Paralysis.
Diminished temperature.	Increased temperature.

Anæsthesia and diminished temperature almost always accompany each other; but an exception is observed in Class *a*—injury of the brain proper. This may possibly be explained by the fact that the nerves with which the bloodvessels are supplied decussate in the cerebro-spinal axis at a higher point than the ordinary sensitive nerves—apparently above the corpora quadrigemina. Hence, if the brain proper be divided on one side, dilatation of the bloodvessels on the opposite side will be produced. The occurrence of increased temperature on the paralyzed side in injuries of the brain has frequently escaped notice;

although Cheyne, Portal, Morgagni, and others, observed it. Though frequent, it can scarcely be said, as far as has been ascertained, to be a constant phenomenon.—*British Med. Journal*, July 10, 1858.

5. *Investigations respecting the Development of Teeth.*—At a meeting of the French Academy of Sciences, M. Guillot read a paper on the above subject. I have been led, says the author, to explain the origin of the teeth in a novel manner, from examining very early embryos of the human and sheep kind, of less than two months, as also from observations made upon fish. I have discovered an organic substance, in the centre of which the first traces of the teeth may be observed; this substance, being intended for genesis and protection, disappears when this twofold function is performed. By the transformation of the molecules, by which it is composed, it successively produces the ivory, enamel, and cementum. The appearance of this substance varies with the age of the subject; it is at first composed of irregular nucleated cells; at that period, the ivory and the enamel begin to be formed, though not yet solid; it afterwards becomes fibrous, by the stretching of the cells, when it brings forth the dental sac and the cementum. The first rudiments of the teeth resemble diminutive spheres, made up of myriads of cells. Those which are most easily discovered belong to the deciduous teeth; towards the third or fourth month, the gums of the permanent teeth are easily perceived in the human subject. In this primitive state, no sack or envelop confines these spherical bodies. Three divisions or partings take place in the interior of these spheroids before they become solidified. One is central, and eventually gives rise to the ivory; the second produces the enamel; and the most external division, the one where the dental sac has been formed, produces the cementum. These changes are the same for the deciduous and permanent teeth. The latter could never emerge from the capsules, which form a close receptacle for them, if a portion of the walls forming these capsules did not disappear, to allow the crown to press forward. This disappearance, which depends on a kind of absorption which the bony cells undergo, can also be observed in the osseous capsules which fix the deciduous teeth. But although, in several places, the jaws decrease in size, and lose the substance of which they are composed, these same jaws increase on other places, stretch out and make the room necessary for the growing teeth. This double molecular movement goes on until the face has attained its greatest development.—*Lancet*, Aug. 21.

6. *Absence of the Left Kidney.*—Prof. Förster relates (*Virchow's Archiv.*, March, 1858) the following example of this. The malformation was found in the body of a boy stillborn at the seventh or eighth month, brought to me from the Lying-in Hospital on the 18th of June, 1857, which exhibited no other anatomical abnormity. The left kidney, with the ureter belonging to it, was entirely absent; the place where the kidney should have lain was occupied exclusively by the intestine, the left supra-renal capsule was in its proper position, and exhibited no change, except that it was larger than the right. The right kidney occupied its normal situation, and appeared rather larger than usual, the calyx and pelvis being somewhat enlarged, in other respects its structure was exactly that of a single kidney. Nor did any trace of the fusion of two kidneys exist; the right ureter was greatly enlarged, ran in a winding course behind the lower extremity of the colon, which was filled with meconium, and opened on the left side into the bladder, exactly in the place where, in the normal condition, the left ureter usually comes down; the caliber of the ureter at this point was very narrow, and would admit of the introduction of only very fine probes; by this circumstance, but still more by the pressure which the colon must have exercised on the ureter, the dilatation of the latter was accounted for. The urinary bladder was considerably distended with urine, which, on pressing the bladder, very readily flowed from the normal urethra; where the right ureter should normally have entered the bladder, there was no trace of it. The testicles still lay within the abdominal cavity, but were very near the entrance into the inguinal canal.

Absence of one kidney, and of the ureter belonging to it, is a malformation frequently observed, but the remarkable course of the right ureter to the left side, and its opening into the left half of the bladder, is one of the greatest rarities. To explain this latter malformation, we must assume that the portion of the ureter, which lay on the left side, originally belonged to the left ureter, so that, consequently, the upper half of the left, and the lower half of the right ureter were deficient, while the halves which were formed united to constitute one ureter, half belonging to each side. If this explanation be correct, the malformation must have taken place at a very early period of the development of the ureters, at a time in which both ureters consisted only of rows of cells, lying parallel to one another; for, in the period immediately following, the ureters are mutually too remote to admit of the hypothetic fusion taking place. Possibly there is a time at which the first foundation of both ureters consists of a single row of cells, which subsequently divides by a separation of the cells in a certain direction into two rows; in that case the occurrence can be explained by supposing that after this separation the development of the left superior and of the right inferior row of cells was arrested, and so but a single series remained.—*Dublin Journ. Med. Sci.*, Aug. 1858.

MATERIA MEDICA AND PHARMACY.

7. *Influence of Liquor Potassæ and other fixed Caustic Alkalies upon the Therapeutic Properties of Henbane, Belladonna, and Stramonium.*—In our No. for April last (p. 501), will be found some interesting observations on this subject, communicated to the Royal Medical and Chirurgical Society by Dr. A. B. Garrod.

Dr. G. has since (June 22, 1858), read before the same society a second paper, the object of which was:—

1. To prove that the active principles of the plants under consideration are absolutely destroyed by the influence of the caustic alkalies.
2. To show the ratio which must exist between the different preparations of the plants and the alkalies for the neutralization to be perfect.
3. To ascertain the time demanded for the decomposition to be complete.
4. To illustrate clinically the influence of the alkali in preventing the occurrence of symptoms, and removing such when large medicinal doses of these solanaceous drugs are administered.

Dr. Garrod, before proceeding to discuss these various heads, brought under notice a few points relating to the nature of liquor potassæ, and the properties of some of the officinal preparations of henbane, etc., showing that the former, although strongly caustic, still possessed but little neutralizing power, containing so small an amount of potash, not more than 6.7 per cent.; and that most of the preparations of henbane, belladonna, and stramonium, as the tinctures and extracts, were strongly acid in reaction, and hence, before the alkali could act upon the active principles contained in them, it must first neutralize this acidity, next separate the alkaloids from the acids with which they naturally are combined in the plants; that, therefore, much more was required (measured by the physiological or therapeutic strength of the drugs) to neutralize the galenical preparations than their alkaloids, or the active principles themselves. To prove that the active principles were absolutely destroyed by the alkali, he (Dr. Garrod) performed several experiments in the following manner: A solution of atropine was made by dissolving it in water, with the aid of a little spirit, dividing the solution into two parts, adding to one some carbonate of potash, to the other a sufficiency of liquor potassæ, and permitting both to remain for some hours. Chloroform was afterwards well shaken with both solutions, and allowed to subside, the supernatant fluid being poured off, and the chloroform washed with a little distilled water. Each portion was evaporated spontaneously in glass dishes. From the solution to which carbonate of potash had been added, a gummy matter was obtained (soon, however, becoming crystalline), a solution of which dilated the pupil intensely; and when acidulated with hydrochloric acid, and chloride of gold dropped in, gave rise to the beautiful plumose crystals of the double chloride of gold and atropine. From the second solution, that to which liquor potassæ had been added, a strong-smelling substance was left, on the evaporation of the chloroform, having no power of dilating the pupil, and giving rise to no crystallization with the gold salt. These experiments demonstrated beyond doubt the absolute destructive agency of the caustic alkali upon the active principles. It was also shown that most other alkaloids, as morphia, quinine, cinchonine, etc., were not so destroyed. To show the ratio which must exist between the different preparations of the plants and the fixed alkali, in order that neutralization may be perfect, Dr. Garrod gave the results of more than sixty experiments and observations in a tabular form, from which it appeared that when atropine is acted upon by liquor potassæ, the destructive influence of the latter is so great that less than twenty minims are required to neutralize one grain of the former, and that probably pure potash will destroy its own weight of atropine. That when belladonna preparations are employed, the power of the potash becomes weakened, from the causes above alluded to, namely, the natural acidity of the drugs, and the necessity of first displacing the alkaloid from the acid with which it is combined; still, however, it was shown by the table that fifteen minims of liquor potassæ will destroy a fluidrachm of the tincture, and that twenty-five minims are sufficient to produce the same change in five grains of the extract; at once demonstrating that quantities very greatly beyond the medicinal doses of these drugs—indeed even poisonous amounts—are rendered quite inert by very moderate addition of the alkaline solution. The same was found to hold good in the case of daturine and the preparations of stramonium. Ten minims of liquor potassæ will neutralize a drachm of tincture of henbane, and thirty minims destroy nine grains of extract of henbane, although when ten grains are employed, dilatation will often ensue from a small portion of the extract, less than one grain being left free; and it should be observed that a very minute proportion of these preparations is amply sufficient to induce the effect. Of course, these extracts and tinctures are liable to variation in strength, acidity, etc., circumstances which must necessarily produce an alteration in the requisite amounts of liquor potassæ required for complete neutralization. With even the best extract, however, procured from one of the first druggists in town, it was found that nine grains were destroyed by the above-named quantity of potash. Nine grains of good extract of henbane and three fluidrachms of good tincture of the same may be considered as doses of the drugs, which few practitioners would prescribe; yet these are destroyed by thirty minims of liquor potassæ, proving, beyond all doubt, that in the porportions prescribed in actual practice a total neutralization of effect ensues. To ascertain the required time, Dr. Garrod made experiments with solutions of atropine, and commenced the observation shortly after the addition of the potash. In an hour and a half the effect on the pupil was much diminished, and in two hours and a half ceased altogether. The influence of the alkali in preventing the occurrence of symptoms, and removing the same when large medicinal doses of these solanaceous drugs are administered, was clinically illustrated by the narration of several cases, in which, after very decided effects had been induced by henbane or belladonna preparations, the addition of a very small quantity of liquor potassæ to the draught (the patient continuing the other drugs) quickly caused the cessation of the symptoms; and again, other instances where the withdrawal of the liquor potassæ from a combination was followed by the occurrence of powerful symptoms. From these observations and experiments, Dr. Garrod concluded that the liquor potassæ possessed the peculiar power of destroying the active principles of henbane, belladonna, and stramonium, even when in very dilute solutions, and that the combinations frequently prescribed are utterly incapable, both in a chemical and therapeutical point of view.—*Med. Times and Gaz.*, July 10, 1858.

8. *Action of Solutions of Chlorate of Soda and Chlorate of Potash on False Membranes extracted from the Air-passages.*—In order to show the solvent action

of the two chlorates, and the more rapid action of the soda, M. Barthez exhibited to the Society tubes containing these solutions, and false membrane introduced into them. These false membranes had been extracted the day before from the trachea and bronchi of a child who had died of croup. In one tube the membrane was placed in contact with pure water. In twenty-four hours no appreciable change had taken place in the appearance of the fibrinous tissue. Two other tubes contained the membrane in contact, for twenty-four hours, with concentrated solutions of the two salts. The dissolution was the same in the two tubes: all membranaceous appearance had disappeared, and the tissue had become diffluent and semi-transparent.

Two other tubes contained false membranes which had been for eighteen hours in the same solutions. The solvent action had been the same, but at the end of twelve or fourteen hours the membranaceous form existed in the tube containing the solution of chlorate of potass, while this form had disappeared in the other tube. And lastly, after the false membranes had remained for eight hours in these solutions, the tissue was not altered in the solution of chlorate of potass, whilst that in the solution of chlorate of soda was completely diffluent; and this change was complete after it had remained three and a half hours in contact with the salt. M. Barthez does not insist on this as the length of time sufficient to produce solution of false membrane; the time must vary according to the thickness, density, and composition of the substance secreted, and according to other unknown circumstances.

Effect produced by Chlorate of Soda on False Membranes still retained in the Trachea.—In dropping a solution of chlorate of soda into the trachea, M. Barthez states: "My only object is, to obtain a solution of the false membranes, in the same way in which that occurs in the tubes as just exhibited. I expect only to soften the adherent surface sufficiently to allow of the membrane becoming more easily detached by the fits of coughing, and so being expelled. The following facts make me think that this object may be sometimes obtained.

"In one patient, a portion of false membrane, which was adherent, and causing suffocation, became detached, and was thrown up in two hours after the drops had been commenced, they being used every quarter of an hour. This false membrane lined the trachea, and went down as far as the bifurcation of the bronchi.

"In another child, drops of cold water, used in the same manner for six hours, produced no result; while, after a warm solution of chlorate of soda had been used for one hour, fragments of false membrane became detached, and were thrown up, and continued to be expectorated abundantly for several hours."

Let us see now the condition in which the false membrane has been found in some children who died, notwithstanding the use of the chlorate of soda drops. In a little girl, 21 months old, the croup progressed so rapidly, that thirty-six hours after its invasion, impending asphyxia rendered the operation necessary. No false membrane was thrown up after the operation. The chlorate of soda was dropped in almost every hour, and at the end of about twenty-four hours a small fragment of false membrane escaped from the canula; however, no improvement followed. On the next day the dropping in of the fluid caused very slight cough, and the discharge of an aqueous fluid, slightly opaque, like when purulent mucus is shaken in water; moreover the sharp râles indicate an extensive capillary bronchitis. Death supervened the fourth day after the operation. The trachea was lined by a false membrane, slightly adherent and tenacious, and softened down so that it was almost impossible to detach it in strips. This membrane did not cover the entire of the mucous surface, but formed, as it were, little islands, between which the exposed mucous membrane was visible, giving a mottled appearance to the internal surface of the trachea. In this case it would seem that the false membrane had been softened on the internal surface, and worn away and detached in several places.

In a boy three and a half years old, who was admitted into hospital on the fourth day after the commencement of the croup, M. Barthez first causticized the larynx, by means of Dr. Loiseau's tube. This was done three times, at intervals of thirty hours, but without any marked effect; at length asphyxia became imminent, and tracheotomy was performed, and was followed by a rejection of some false membrane. A solution of chlorate of soda was dropped in every hour or half hour; each drop produced a slight fit of coughing, followed by expectoration of mucus, without any false membrane. No improvement took place, and the child died twenty-four hours after the operation.

At the autopsy we found a false membrane extending continuously from the top of the larynx to the third ramification of the bronchi. In the larynx this yellow false membrane filled the ventricles, and closed up the windpipe; it was adherent to it, and sufficiently consistent to be detached in one piece. In the trachea it formed a complete tube: but from the inferior part of the larynx to the commencement of the bronchi it was softened, almost semi-fluid, and could only be detached in small fragments. In the bronchi it resumed its consistence, and closed up a great portion of the air-tubes. In this child, then, the chlorate of soda appears to have softened the false membrane superficially, but there was not sufficient time for it to be detached and thrown up.

In a child five years of age, admitted on the third day after the attack, ordinary treatment having failed, the operation was performed on the fourth day. After the lapse of about an hour, false membranes were thrown up spontaneously. Two hours later, their expulsion having ceased, we began to use the chlorate of soda drops every half hour. A very large quantity of false membrane was thrown up for about four hours; then all expectoration ceased, and the child died asphyxiated ten hours after the operation. The larynx was found partly obliterated by false membranes of a medium size, and partly detached. On opening the trachea, this tube did not contain any fibrinous product, but at its inferior portion, and at the commencement of the bronchi, there existed a collection of false membrane, placed across the bifurcation of the bronchi, falling down into each bronchial tube, and prolonged uninterruptedly as far as their third ramification. This mass was not anywhere adherent; it seemed to be altogether detached from the parts above it, and to be retained below only by its continuity with that portion which filled the bronchial tubes.

These five cases are sufficient to show that the action of chlorate of soda on false membranes in the trachea is, if not certain, at all events very probable. They show also its different modes of action. In appreciating its value, we are to take into account, not only the solvent power of this solution, but also the effects of the application of water alone, and also of the fits of coughing which the introduction of fluid will produce; and the assistance thus rendered to the detachment of the false membranes. Notwithstanding this complicated mode of action, M. Barthez thinks he has good grounds for referring the good results, partly or entirely, to the solvent action of the salt.

Indications and Contra-indications for the use of the Chlorate of Soda Solution.—1. The first indication arises from the existence of false membrane in the trachea, or in the trachea and bronchi. If the fibrinous product be seated in the throat or larynx exclusively, it would not be necessary to use the drops. It certainly is not always easy to be satisfied as to the existence of this false membrane in the larynx; but supposing any doubt to exist on the subject, there would no harm arise from their use. In that case they act, not so much by the specific power of the salt as by the warm water, which dilutes the adherent mucus, provokes cough, and favours expectoration.

2. Whatever be the situation of the false membrane, if the child presents symptoms of diphtheritic poisoning, there is no motive for using the drops. In that case it is not the false membrane which kills. We are not warranted even in performing tracheotomy; much more is the use of the chlorate of soda solution perfectly inefficacious.

3. If the expectoration is easy and abundant—if the false membranes are easily detached, and thrown off in proportion as they are formed, there is no occasion for using the drops.

4. The only indication for their use, then, is in those cases where, after operation, the false membrane in the trachea or bronchi is thrown off with

difficulty, and threatens to produce asphyxia. The symptoms which indicate such condition are not absolutely certain. Those which have hitherto guided me are the dry and stridulant noise, or sort of dry *claquement*, produced by the passage of air through the canula and the trachea; the obscurity of the respiratory murmur; the absence or scarcity of mucous or pseudo-membranous expectoration; the persistence of, or the not sufficient rallying from, the impending asphyxia which precedes the operation.

The indications being well established, will the use of this solution, as described, of necessity bring about a cure? That does not at all follow, as, indeed, is proved by the cases above detailed. The chlorate of soda may assist the child in getting rid of the mechanical impediment to the entrance of air into the lungs; it does nothing more. After tracheotomy, life depends on too many different circumstances for us to hope to save it by one single measure which is only calculated to serve a special purpose, as is the chlorate of soda. It is, then, only under the circumstances which I have pointed out, that I consider the use of the solution of chlorate of soda can be of any service after tracheotomy, or that I advise surgeons to make trial of it.—*Dublin Hosp. Gaz.*, July 1, from *Gaz. Méd. de Paris.*

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9. *Value of Iodide of Iron.*—The iodide of iron is comparatively a new preparation, as it was only in 1834 that Dupasquier, of Lyons, distinguished no less as a chemist than as a physician, made some very interesting trials of this preparation in the treatment of pulmonary phthisis, and proposed a new method of preparing it. He then showed that he had performed several cures upon patients affected with crude pulmonary tubercles, and had considerably relieved others whose tubercles had begun to soften. In the hands of others, however, the use of iodide of iron has not been attended with uniformly good results, probably in consequence of the uncertain nature of the preparation; sometimes too much of the iodide was received into the stomach, and besides this, there was occasionally an excess of iodine present, which was converted in the system into hydriodic acid. In recent times, M. Gille has proposed to administer the iodide in the form of sugar-plums, and in the formula recommended it is said that the proportions of the iron and the iodine are preserved unaltered. M. Boinet records two cases of abscess of a very aggravated character cured by the internal use of iodide of iron, together with ioduretted injections into the sac of the abscess. The first case was that of a child, nine years old, in whom there was caries of the fourth, fifth, and sixth dorsal vertebræ; and there were two abscesses, one in the back, on a level with the diseased vertebræ, and the other, also on the right side, in the iliac region. The disease had continued for several months without any amelioration, when, on the 8th of January, 1857, the abscess in the iliac fossa was punctured and injected with tincture of iodine; the patient was put upon good diet, and cod-liver oil was given internally, together with sugar-plums (*dragées*) of the iodide of iron. On the 17th of January both the abscesses were punctured and injected at the same time. This operation was subsequently repeated on several occasions, and under this treatment the fistulous openings caused by the punctures gradually dried up, and at last became completely cicatrized. The child improved in all respects, and under the use of the iodide of iron in sugar-plums, and the influence of strengthening food, became strong and well. The second case was that of a man, aged sixty-three, under the care of M. Malgaigne, at the Hôpital St. Louis, who had a large abscess below the crural ligament. M. Boinet punctured this abscess, which discharged more than three pints of a grumous pus. The opening was then injected with tincture of iodine; the abscess remained fistulous for some time, and allowed a small quantity of pus to flow out every day, but it soon closed. The iodide of iron was administered internally, and the patient was put upon a strengthening diet; and six weeks after the operation and the internal use of the iodide, the patient left the hospital quite well.

In a lecture on chlorosis by M. Gendrin, the lecturer recommends iron and manganese as the best remedies in this disease, and passes in review the different preparations of iron which are employed in medicine. One of the most useful preparations in cases of chlorosis complicated with scrofula, or only with a lymphatic temperament, is the iodide of iron. But, unfortunately, this salt is very easily decomposed, and in order to employ the syrup with advantage, it should be prepared at the very time when it is to be taken. The invention of M. Gille fulfils the objects of practitioners in recommending this medicine, for he envelops the iodide with a layer of sugar, which altogether prevents the access of air. These sugar-plums have been preserved more than two years without any alteration of the iodide. M. Gendrin speaks strongly in favour of this preparation, the value of which consists not only in the indefinite preservation of the ferruginous salt, but also because it renders its administration easy and agreeable. The iodide of iron has the advantage over other preparations, of being well borne by the patient, an advantage which it undoubtedly owes to its great solubility.

M. Rostan, in a lecture on chlorosis, says that the iodide of iron possesses, in the promptitude of its curative action, a very manifest advantage over the other ferruginous compounds; the syrup of the iodide has not been used in medicine so much as it would have been if it had more stability; but the preparation of M. Gille renders the administration of this salt as easy as that of the oxide or the carbonate.

In phthisis, the iodide of iron has been found to act very beneficially, and its importance in this disease will be increased when it is preserved chemically pure, and given in suitable doses. Louis, Andral, and Bricheteau, have all used with success the syrup of the iodide of iron in pulmonary tubercle; and more lately Dr. Belouino has published some cures of this disease effected by the administration of the sugar-plums of M. Gille. "Recent observations," says Dr. Belounio, "have assigned to iodide of iron an important place among therapeutic agents, and it may be boldly placed among the best medicines which we possess. Formerly it was unworthy of confidence, because it was badly preserved and was easily decomposed, and consequently did not give always identical results. Physicians, in consequence, declined to make use of it. At present the iodide of iron—thanks to the laborious researches of M. Gille—is preserved in a state of perfect purity. I have had occasion to employ very often the preparations of this gentleman, and I have attained experimentally the conviction that the iodide of iron is an excellent medicine in cases of anæmia, scrofula, rachitis, chlorosis, and often in certain cases of pulmonary phthisis in which the organism requires to be strongly fortified." Dr. Belouino records two cases of phthisis which were cured by the administration of iodide of iron; one was the case of a lady, aged twenty-four; the other that of a child, aged five; in both, the existence of tubercular disease was ascertained, but it disappeared under the use of the iodide.—*Brit. and For. Med.-Chir. Rev.*, July, 1858, from *Journal des Cliniques des Hôpitaux de Paris*, May 10, 1858.

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10. *Therapeutical Uses of Strychnia.*—Dr. H. R. DE RICCI states (*Dublin Quarterly Journ. Med. Sci.*, Feb., 1858), that for many years past he has employed nux vomica and its preparations in a great many different forms of disease.

The diseases in which he has found these of most use, "are those where, from some cause or other, the *nervous powers* are not as vigorous as they should be—where there is a lassitude and a want of tone in the system—in short, in cases of *functional derangement;* whilst in *lesion* or disease of the nervous centres, its employment has always proved injurious in my hands. In every form of dyspepsia not arising from organic lesion, its use will be found advantageous, but most especially in the dyspepsia of literary men, lawyers, and scholars, especially when accompanied by constipation. Also in that relaxation of the muscular fibre, total lassitude, and want of tone, for which the physician is so often consulted by ladies who go out much into society; a state almost invariably accompanied by leucorrhœa, indigestion, loss of appetite, and a certain amount of erethismus—here nux vomica and its preparations will be found of the greatest value. But it is in chlorosis that its efficacy will be really manifested—for though chlorosis is ranked as a blood disease, it is, more strictly speaking, a disease of impaired innervation; and the deficiency of red disks in the blood, which causes the peculiar greenish-yellow colour of the patient, and from which very appearance the name of the disease is taken, is the effect of imperfect assimilation, the primary cause being either an impaired or perverted action of the nervous functions, a fact which will be apparent to the most superficial observer: for how often will be found, out of a large and healthy family, one of the daughters, *and one only*, acquiring by degrees the pallid look of incipient chlorosis, while all the rest retain their wonted healthy aspect; and yet the sickly one has all the while been exposed exactly to the same physical conditions, breathed the same air, dwelt in the same rooms, eaten the same food—why then should this one be deficient in blood-disks? If now the careful physician searches into the cause, he will, in all probability, find out by degrees that, some time previous to the setting in of the disease, the patient had suffered from some strong mental emotion—a sudden fright, or sudden unexpected sorrow—and from that had dated the commencement of her illness.

"By far the greater number of chlorotic cases which I have met with in the upper classes had their origin in some such mental impression, and this fact would of itself, I think, be sufficient to characterize this disease as one of deranged nervous function, even if we had not the corroborative testimony derived from medical treatment. Now if a case such as I have supposed is treated solely with chalybeates, but little progress will, in all probability, be made towards recovery: in vain you will administer the metal so much needed by the system—the lacteals will fail to *discern* and appropriate it. It will pass away by the bowels, and there do mischief by increasing the constipation already, most probably, existing. To remedy this the usual purgative of aloes and other such drastics will be recurred to, probably in heroic doses, and then, by increasing the debility, the patient will be placed in a worse condition than before. Let, however, the iron be combined with quinia, a medicine which I need not say acts especially on the nervous system, and the improvement will be manifest; but if for quinia you substitute strychnia, then the effect will be truly surprising. Until lately I was in the habit of adding the strychnia in solution to a bitter vegetable infusion containing some preparation of iron, generally the citrate, but my friend Dr. Aldridge having brought under my notice a double citrate of iron and strychnia, analogous to the well-known preparation of iron and quinia, I have adopted its use with marked advantage and success. This salt contains, I am told, one grain of strychnia in every hundred. The dose I have been in the habit of commencing with has been two grains twice a day, immediately *before or after* a meal, selecting in preference breakfast and lunch, and increasing its gradation to ten and fifteen grains twice a day. My prescription has generally been the following: Citrate of iron and strychnia, forty-eight grains; chloric ether and aromatic spirit of ammonia, of each a drachm and a half; infusion of chiretta, sufficient to make a twelve-ounce mixture: of this, a tablespoonful at dinner and lunch. By the use of this combination the troublesome constipation, frequently alternating with diarrhœa, so often accompanying chlorosis, will be entirely obviated; the bowels will resume their healthy action, in consequence of their peristaltic motion being improved, and the lacteals and absorbents being roused to increased action, will seize upon the metal and rapidly assimilate it. The combination of strychnia with iron will also tend to check that excitability which manifests itself under so many and varied forms in this disease, and will correct that lassitude which is one of the characteristics of this malady."

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11. *Saoria as a Remedy for Tapeworm.*—Dr. STROHL published, in 1854, a memoir upon the principal *tæniafuges.* This work was undertaken to make known some remedies of this nature sent from Abyssinia by M. Schimper. This country abounds in tænia, and there are very few inhabitants who are not troubled with the parasite. It seems, however, that nature has placed the remedy close to the disease, and that Abyssinia possesses very powerful anthelmintics. One remedy which exercises a mild and certain operation over tapeworm is the *saoria*, or fruit of the *mæsa picta.* Dr. Strohl administered it to thirteen persons, some of whom were sickly women, and one was a child two

years old; and after the expulsion of one worm, no other appeared in any of the cases. The new observations made upon this substance confirm Dr. Strohl in his previous favourable opinion of the remedy, and the results of his experience prove to him, 1st. That saoria is a more certain tæniafuge than the remedies of the same class indigenous to France, but that the constancy of its operation is not yet proved; it appears to kill the worm. 2d. It action is mild, seldom accompanied with disagreeable effects, and it is not difficult to swallow. 3d. It may be administered without fear and easily, to young children, to women, and generally to persons of deteriorated constitution and with a weakened digestive canal. 4th. These different properties secure its superiority over the tæniafuges indigenous to France. 5th. It is preferable to kousso, in consequence of its milder action, although a tænicide remedy, and of its being much more common than kousso, from the low price at which it might be obtained. Its preservation, which is easier and longer, is also an advantage over this last medicine, and over the fern. 6th. Time alone can determine whether its action is radical, or only palliative. Dr. Strohl's mode of administration consists in mixing the saoria with some aromatic infusion, and the medium dose for an adult is twenty to thirty grammes. It usually acts as a purgative, and this action may be promoted by giving, in addition, some castor oil.—*Brit. and For. Med.-Chir. Rev.*, July, 1858, from *L'Union Médicale*, Dec. 29, 1857.

12. *Iodide of Calcium.*—Dr. J. Pidduck read before the Royal Medical and Chirurgical Society (June 8) a paper, the object of which was to call attention to this new salt.

Dr. P. has used it extensively since 1855, in public and private practice, with satisfactory results. It has not, he said, been brought with a view to supersede the valuable preparations of iodine already in use, but as a preparation which might be used in cases wherein the iodide of potassium was inadmissible. Its advantages were: that the solution given in milk was tasteless; that being readily decomposed by the weak acid of the stomach, it was presented for absorption in a state of atomic division; that it did not excite the circulation, nor irritate the stomach or bladder by passing off too rapidly by the kidneys; that it did not occasion iodism or resorption of the healthy tissues. The diseases for which it has been successfully prescribed by the author, besides those strumous affections for which the other preparations of iodine were generally used, were: chronic catarrh and bronchitis; incipient phthisis; squamous diseases of the skin; chronic metallic poisoning by mercury, lead, and copper. Under its administration the gums had become healthy, the fetor of the breath had been removed, the neuralgic pains had been relieved, and the patient's health had been restored. The forms in which it had been prescribed were: the simple solution; the solution and compound fluid extract of sarsaparilla, and fluid extract of dandelion; the solution and tincture of sesquichloride of iron; and with other tonic and bitter vegetable infusions not containing starch. —*Med. Times and Gaz.*, June 26, 1858.

13. *New Local Application in Erysipelas.*—M. Anciaux speaks in high terms of the following application for erysipelas and some other cutaneous affections: —Alum, reduced to impalpable powder, 30 parts; white precipitate, 1 part. Rub up well together, and place the powder in a bottle, and then add from 90 to 100 parts of glycerine. Shake the bottle until the mixture assumes a creamy consistence, and repeat the shaking whenever the application is about to be employed.—*Dublin Hosp. Gaz.*, July 1, from *Presse Belge*, 1857.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

14. *Diphtheritic Affections.*—A late No. of the *Archives Générales de Méd.* contains an interesting paper by M. Isambert on diphtheritic affections and on

the malignant angina in Paris in 1855. The following are the author's conclusions:—

Diphtheritic affections sometimes appear sporadically; they often seem to be endemic, and also epidemic and contagious. Epidemic influences are often the principal causes. Contagion does, however, really exist, as several medical men have been infected.

Shall we agree with M. Bretonneau, and believe that diphtheritis is not propagated by the air, but is always the result of a kind of inoculation or actual contact of the morbid secretion with a mucous membrane? The author thinks this opinion too exclusive, as also does M. Trousseau.

Diphtheritic affections are generally preceded by initiatory symptoms in the form of bronchitis, with more or less fever. The general aspect of these affections, at an advanced period, is of the adynamic kind, except when there is much agitation and convulsive effort brought on by croupy exudation.

These ailments are of a decidedly specific nature; the more they are studied, the more we remain convinced that inflammation is of secondary importance, and is sometimes completely absent.

Relapses are not rare in diphtheritis; this complaint therein differs from other specific diseases; as variola, rubeola, and scarlatina.

The general treatment should be directed against the inflammation, if it be present, which circumstance is, however, rare. Abstraction of blood should be used cautiously in an affection which so soon assumes a typhoid character. Cutaneous counter-irritation should be completely avoided, as the irritated regions soon become centres of new diphtheritic manifestations. Emetics are extremely valuable; and alteratives, mercury, alkaline carbonates, and chlorate of potash, are often useful.

Local treatment is very important, and consists of an energetic modification of the affected surfaces. Calomel, alum, hydrochloric acid, and especially solutions of nitrate of silver, are always indicated.

The patient should, finally, be well sustained, besides taking medicines, as there is a tendency to a typhoid state in this kind of affection. He should also be given tonics, as bark, coffee, and wine; the latter tonic is especially advisable during convalescence after severe diphtheritis.

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15. *Epidemic Diphtheritic Angina at Lima.*—About the close of the month of July, 1851, an epidemic grippe appeared, and suddenly attacked the whole population of Lima, and was fatal, particularly to old people, in consequence of grave pneumonias which were developed in its course. The first cases were observed from the middle to the twenty-fourth of July, and extended rapidly and simultaneously to all the inhabitants of this city, so that, during the height of the epidemic, the streets were deserted for ten or fifteen days. Since that period, we have suffered two other epidemics, one ever memorable on account of the great ravages it caused—the yellow fever, the first invasion of which occurred in the summer of the year 1852, in a benign form, to become grave and fatal in the years '53 and '54; and the diphtheritic angina, which, though not so general or fatal as the preceding, did not fail to secure some victims, notwithstanding the small number of persons attacked.

To this last, which still prevails, we devote a few lines.

If we may rely upon the few and incomplete records left by our predecessors, relative to the epidemics which have inflicted the inhabitants of Lima, the diphtheritic angina appeared here for the first time in the year 1821, and then, as now, merited the epithet epidemic, because it appeared simultaneously in a large number of individuals. Since that date, we have no notice, nor does there exist any document to show its reappearance until the year 1850, when it attacked, sporadically, a small number of persons, to whom it proved fatal. Four years passed, and in 1855, it exterminated almost an entire family, without extending beyond the house in which it caused such marked ravages. And, in the month of April last, 1858, it appeared again, and from that time to the present, there is scarcely a practitioner who has not had at least two or three cases under his care. It is worthy of remark that our estimable fellow-member, Dr. Josè J. Bravo, prognosticated the invasion of this disease in February last, on the ground that it had appeared a year and a half ago epidemically at Piura, passed to Trujillo, and thence to Huacho, places where it had some victims, and that it was rational to expect so fearful a guest, which, from its origin, was propagated from north towards the south.

As the diphtheritic or pseudo-membranous angina now prevailing does not differ in its symptoms or anatomical characters from that described by authors under the same name, or from that which we have mentioned as described by Dr. Valdés, we believe ourselves to be excused from entering into details, contenting ourselves, for the present, with merely indicating the class of society in which the diphtheritic angina appeared more especially, the proximate number of sufferers, and the treatment resorted to in preference by a majority of the profession.

It was natural to expect that, once developed amongst us, this disease would find its largest number of victims in the needy class, as happens in certain European populations, where it prevails with some frequency; but the contrary has happened, for it has attacked, in preference, persons who enjoy all possible comforts, and in so marked a manner that, in the hospital for men, there has not been a single case, and in that of Santa Ana, for women, there has been only two. The black race, up to this time, has been as resistant to this angina as it was to the yellow fever. It is to be regretted that no data on this point can be obtained from the history of the epidemic of 1821, above mentioned. For this and various other reasons, we have characterized the description by Dr. Valdés as incomplete.

We should have been pleased to present an exact statement of the number attacked by the angina; but it may be readily perceived that such a labor is impracticable, inasmuch as it has not yet ceased, and because it has not occurred in the hospitals, where it might be accurately made.

Notwithstanding the many impediments we have encountered, we have succeeded in obtaining, from a majority of the most respectable practitioners, the number of cases they have treated, with the following result:—

Of 70 cases of diphtheritic angina, 49 were females and 21 males; 55 were cured and 15 died. Of the 15 deaths, only two were adults, the rest between 3 and 12 years of age, much the largest number being between 3 and 5 years old. Of the 55 cured, only 5 were under, and the remaining 50 exceeded 12 years of age. The whole 70 patients belonged to the white race. The total number attacked up to this time is between 80 and 90.

The majority of physicians have decided in favour of cauterizations with pure chlorohydric acid, practised two or three times a day, according to the gravity of the case, and emetics of tartar emetic or ipecacuanha, alternately employed. It is not our object, nor is it possible, to decide upon the degree of curative efficacy in diphtheritis which the cauterizations may possess: but we ingenuously confess that this treatment, employed actively from the beginning, has yielded happy results in the greater number of cases, and it has been inefficacious in the most of those cases in which it has been applied two or three days after the development of the disease.

We hope that time and experience will determine the true value of this remedy, which is considered impotent by some of our practitioners. We have employed emetics exclusively for their mechanical effects on the pharynx, favouring the expulsion of the false membranes; but it may be said, in passing, that their abuse in children produces more hurt than advantage, and they do not tolerate them as well as adults, in whom we have observed no accident, although fear, caused by the gravity of the disease, may have induced us, perhaps, to carry them further than we ought. As purely auxiliary, we have used opiate gargles, and the liquor of Labarraque. We know that some have employed different therapeutic agents in this angina, such as bark, internally, baths, gargles, and cataplasms of a concentrated decoction of the same, sulphate of quinine, cauterizations with a concentrated solution of nitrate of silver, or sulphate of copper, &c. &c.; but we are entirely ignorant of the opinion which should be formed as to their utility. M. ODRIOZOLA.

In *Gaceta Medica de Lima. Organo oficial de la Sociedad de Medicina.* Lima, July 15, 1858.

16. *Diphtheria, or Diphtherite.* By David Thompson, Esq., of Launceston.—About three years since, this neighbourhood was visited by an epidemic of this rare disease. The first cases occurred in the town, and no others then appeared for several months, when it again broke out in the district north of this place, where it prevailed for several months, whilst the south side was comparatively free from it. From the north, it gradually spread, until the whole line of country had been visited by it. There appeared to be no difference in the geological nature of the country, the level, or the aspect, in increasing the severity or granting an immunity from the disease. The premonitory symptoms varied somewhat. A few retired to rest comparatively well, and awoke in the morning with the throat sore, and covered with white deposit. In the majority, it was preceded by all the ordinary symptoms of pyrexia, of which headache was one of the most severe, followed in the course of a day or two by the usual throat symptoms. An extreme feeling of depression, not to be accounted for, by the amount of mischief in the throat, was a characteristic symptom in each case. An external examination of the throat showed the tonsil generally to be swollen, hard, and tender to the touch; while sometimes the parotid gland participated in the swelling. Internally, the tonsil was swollen, and either covered with the diphtheritic deposit, which frequently extended over the pharynx, and sometimes into the nares and palate, or else it would be scooped out into an ulcer, with raised violet-coloured edges; the floor exhibiting a dark ash-coloured slough. In some instances there would be no deposit or ulceration at first, but simply the tonsil painful and enlarged. These cases generally changed for a state of ulceration, which began in several distinct spots, and gradually spread over the whole tonsil. In the most severe examples, the tonsil sometimes sloughed *en masse.* I saw one instance in which this occurred, in an early stage of the disease; and where now (two years since it occurred) a cavity remains, capable of containing a pigeon's egg, across the surface of which extends a small band of mucous membrane, which did not slough at the same time, and gives great inconvenience, from retaining the food impacted in the hollow during deglutition.

I have seen no case in which I could detect the extension of the disease into the œsophagus; but in many it has entered into the air-passages, this being the most frequent and most fatal complication. Of 485 cases that came under my own observation, the instances in which the air-passages became involved in the disease amounted to 15; and of this number 11 died, the greater number within a few hours after the first symptoms of croupy breathing began. The false membrane formed on the tonsil and pharynx extended into the larynx, trachea, and frequently far into the minute divisions of the bronchi. In one instance, a girl aged 17 expectorated, within twelve hours after the first symptoms of croup made their appearance, a complete cast of the larynx, trachea, and bronchial tubes, extending to the fifth division of the bronchi; in a few hours afterwards, a fresh membrane formed, and she died from suffocation.

In many instances, I saw numbers of minute casts expectorated from the lungs, while at the same time a stethoscopic examination gave all the symptoms of capillary bronchitis. A gentleman, aged 46, died from this condition of the lungs. His throat was first affected. After a few days, the breathing became impeded, with all the ordinary symptoms of capillary bronchitis in the first stage, the throat continuing to improve. He gradually sank, constantly expectorating casts of the small tubes, precisely similar to the deposit in the trachea.

I kept accurate notes of 125 of the most severe cases, including all the deaths.

	Cases.	Deaths.
Males	55	9
Females	70	4
Totals	125	13

The deaths, with two exceptions, were all below fifteen years of age; and, with two exceptions, were all from affections of the air-passages. In the two who died from other causes than affections of the air-passages, death occurred in one from the sloughing of a blister, applied for three hours to the upper part of the sternum; and in the other from extreme debility remaining after recovery from croup. There was a very remarkable tendency for blistered surfaces to take on unhealthy action; and I frequently saw the irritated surface covered with a deposit similar to that on the throat.

A strong similarity appears to exist between this disease and scarlet fever, so strong, as almost to lead one to hazard the opinion that it may be a modification of that disease. The following are the reasons for considering so:—

1. Diphtherite prevailed in this neighbourhood as a contagious (?) epidemic at the same time as well-marked scarlet fever, and chiefly among children.
2. In the same house, the father and mother had well-marked scarlet fever severely, without any ulceration or deposit on the throat; while the three children had all the marked symptoms of diphtherite, without much feverishness and *no rash*, though attended by the same premonitory symptoms, the cases occurring at the same time.
3. In many instances, cases of apparently pure diphtherite were, after some days, attended by a rash, that seldom remained more than a few hours.
4. The disease in most instances commenced with all the symptoms of fever, its duration being similar to that of scarlet.
5. In cases of apparently pure scarlet fever, the throat became, after a few days, covered with diphtheritic deposit.
6. The sequelæ of the two diseases nearly resembled each other; albuminous urine, with casts, being present in eight cases of diphtherite, and anasarca proving fatal from convulsions in one.

It would occupy too much space to give more than a mere outline of the subject; but future and more extended experience than mine may prove whether there is any connection between the two diseases. Deafness was a not unfrequent sequela of diphtherite and temporary paralysis; in all instances these were recovered from. I have only known one case of diphtheritic ophthalmia to have occurred in the neighbourhood. In that instance, the deposit extended over the lower half of the conjunctiva.

The treatment most successful was the early and thorough application of lunar caustic to the throat, together with the use of a stimulating gargle of nitrate of potass and capsicum, or solution of chlorinated soda (Beaufoy's) diluted. When there was much feverishness in the early stage, an emetic appeared sometimes to benefit. Mild but continued counter-irritation over the upper part of the chest appeared of great service. General treatment, beyond keeping the secretions regular, was of little use, and frequently injurious. Depletion of any sort did an infinite deal of harm. Stimulants were often required in an early stage. The chances of recovery when croup set in severely were but small. The only chance seemed to be, in the rapid exhibition of small doses of calomel and ipecacuanha, with stimulants. Under this treatment, four out of fifteen recovered who were affected with this complication. Tracheotomy was tried, but of no service, as the false membrane extended beyond the trachea.

In a number of the *Lancet* for, I think, the year 1832, there is a most characteristic case described by Dr. Alison, of Edinburgh, as having occurred in the Royal Infirmary, and which terminated, as the fatal cases here did, in croup.

A careful microscopic examination of the white deposit showed nothing different from the usual appearances of exuded lymph.—*British Med. Journal*, June 5, 1858.

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17. *Effect of Local Influences on Spasmodic Asthma.*—The *Edinburgh Medical Journal* for June last contains an interesting paper on this subject by Dr. HYDE SALTER, in which the author relates a number of striking examples illustrative of the effect of local influences on spasmodic asthma. These cases establish the following conclusions:—

"1. That residence in one locality will cure, radically and permanently cure, asthma resisting all treatment in another locality.

"2. That the localities that are the most beneficial to the largest number of cases are large, populous, and smoky cities.

"3. That this effect of locality depends probably on the air.

"4. That the worse the air for the general health, the better, as a rule, for asthma: thus the worst parts of cities are the best, and conversely.

"5. That this is not always the case, the very reverse being sometimes so—a city air not being tolerated, and an open pure air effecting a cure.

"6. That there is no end of the apparent caprice of asthma in this respect, the most varying and opposite airs unaccountably curing.

"7. That, consequently, it is impossible to predict what will be the effect of any given air, but that probably the most opposite to that in which the asthma seems worst, will cure.

"8. That some of these differences determining the presence or cure of asthma appear to be of the slightest possible kind, arbitrary and inscrutable.

"9. That the mere conditions of locality appear to be adequate to the production of asthma, in a person whose disposition to it was never before suspected, and who probably would never have had it had he not gone to such a locality.

"10. That, consequently, many healthy persons, who never have had asthma, and never may, probably would be asthmatics if their life had been cast in other localities.

"11. That *possibly* there is no case of asthma that might not be cured if the right air could only be found.

"12. That the disposition is not eradicated, merely suspended, and immediately shows itself on a recurrence to the original injurious air.

"13. That change of air, as change, is prejudicial.

"14. That, from the caprice of asthma, the constancy of the results in any given case is often deranged."

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18. *The Diagnosis of Pulmonary Consumption at its Commencement.*—Dr. Scott Alison read a paper recently on this subject before the Western Medical and Surgical Society. The importance of diagnosis at an early period was shown by reference to facts arranged under three heads—1st, the vast mortality in advanced stages; 2d, the great destruction of the lining structure almost invariably found when the disease has long existed, in a great proportion of cases excluding all reasonable hope of remedy; and 3d, the material benefit afforded in a very large proportion of cases easily diagnosticated and treated. The number of patients under the care of the author at the Hospital for Consumption at Brompton, who here formed the grounds for calculation, is nearly 2000. The mortality in advanced cases has been very great, and very few have presented signs of permanent restoration to health; whilst the mortality in early cases has been comparatively trifling, even when long observed. About one-half of these latter cases have been greatly improved, and have presented satisfactory evidences of the disease being arrested. Numbers have returned to their employment, or applied themselves to less laborious and exposed occupations. Muscle and fat have greatly increased, cough has been removed, and the respiration has been deprived of much of its shortness. About three-fourths of these patients presented grave symptoms and the usual physical signs; while the remainder presented either well-marked physical signs without material symptoms, or very marked symptoms with physical signs rather beneath the average weight of evidence ordinarily deemed proof of phthisis. The author regards the results as due to the early period at which disease was diagnosticated, and not to any particular method of medical treatment. Early diagnosis would be secured by a complete inquiry into the history of each case, by regarding the entire series of symptoms, and by a complete physical examination instituted at once, the chest being freely exposed back and front. The present state of medical knowledge was such and so widely diffused, that it was not likely we should be able to find any new symptoms of the disease, one which had been carefully observed for ages; but it was not unlikely that we should increase our knowledge of the physical signs. In the particulars of sound, form, and motion, additions would probably be made; but it was with respect to sound that most advance would be effected. Simple observation by the present means of auscultation would probably suffice to do much, but it

was not unlikely that improvements in our instruments for auscultation would render assistance. Dr. Alison referred to certain sounds which he had frequently heard in phthisis at its commencement, and before dulness of percussion had manifested itself, or was materially pronounced. The sounds were an "arrowroot-powder" sound, very fine, and accompanying expiration; buzzing, humming, and kettle-boiling or kettle-singing sounds. He was as yet uncertain as to the mechanism of the kettle-singing sound, but was inclined to think the evidence pointed to slight pressure on the veins of the lung causing oscillations of the blood and vessels, such conditions as are produced in the neck by gentle pressure with a stethoscope or by tightened integument. This sound is continuous, and several of the patients who presented it had suffered from hæmoptysis. Crumpling sounds had been frequently heard. A great means of discovering phthisis was afforded in the differences in the character and amount of respiration; and he (Dr. Alison) believed that the instrument which he had made, which gave a stethoscope for each ear, and which he designated the Differential Stethoscope, would prove available in rendering very slight differences in respiration appreciable, which could scarcely be discovered by the ordinary stethoscope. The ordinary stethoscope necessitated removal of the instrument from one part to another, and a certain loss of time, though slight in itself, important when comparing two sensations nearly alike, was incurred. For the diagnosis of pulmonary consumption at its commencement, we should look for the signs of that disease at that period, and not for those of later periods. The acoustic properties of the lung with small points or spots of tubercle were, and must be, different from those of that lung which is so studded with tubercles, or so infiltrated with that material, that nearly all the lung tissue proper is pressed upon or obliterated, or when the lung is broken down and has little cohesion, and presents numerous cavities. (The Differential Stethoscope was exhibited to the Society.) In many examples of pulmonary consumption no dulness on percussion whatever is found; and not one of the recognized signs is present in all cases, or even at all times in the same case. We must be content with a certain amount of evidence, and that will not be the same in all cases, or in the same case at different times. Deviations from the natural configuration of the chest occurred in pulmonary consumption at an early period. These were made out by their history and by comparing one side with another. The author's Chest-Goniometer would serve in discovering the deviations from the natural angles and curves, and in measuring them. The measurement at one period might be compared with the measurement at another. (The instrument was exhibited.)

Specimens of tuberculated lung, both in the early and later stages of the disease, were exhibited; and they served to prove that the physical signs in the different conditions of lung must greatly vary, and that the lung dotted with solitary tubercles the size of mustard-seeds, would afford few if any of the ordinary signs, and chiefly produce deviations in quality from the natural respiratory sounds, and some such delicate new sounds as had been referred to. The author was not prepared to say that these delicate sounds would not be found in other morbid states besides phthisis, but the same limitation held in respect of all other sounds.

The examination of the sputum, and the discovery by means of the microscope of tubercle and lung tissue, were referred to.—*Lancet*, June 19, 1858.

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19. *Diet in Phthisis.* By M. Champouillon.—The ideas formerly entertained regarding the nature of phthisis have now given way to others of a more sound and better established character. Tuberculization of the lung, so long considered as a mere local disease, is now recognized as a general or constitutional affection—a diathesis having its elements, so to speak, throughout the whole system, and only localizing itself in the lungs when circumstances favourable for such an occurrence arise. Such a mode of origin being admitted, if not demonstrated as being that of tubercle, we are consequently called upon to inquire what are those means most likely to modify or to counteract it; and to the particular kind of aliment adopted by the individual has been attached the greatest amount of importance in this respect, as being the most energetic

of all those influences modifying that condition of the organism associated with this disease.

M. Am. Latour, who has to a great extent appropriated this question of dietetics, has recently laid down rules for the regulation of aliment in tubercular disease, both as a prophylactic and curative means of treatment; and, impressed with the analogies subsisting between phthisis and scrofula in general, has come to the conclusion, that a regimen of a tonic nature is equally suitable for both of those affections. In this way, rich soups, animal food roasted or grilled, old claret, goat's milk salted, etc., mainly constitute and limit the regimen he prescribes in pulmonary cases of this kind. M. Rufz is somewhat bolder in his advice to such patients: "Enjoy life; go out or come in, on horseback or on foot, as you please," says he, "but go." Such confident treatment could only be justified by success; and success in this way does not appear to have been wanting to M. Rufz, who, in support of his doctrine, adduces two remarkable examples.

Dr. Noverre, a confirmed subject of tubercle, on seeking a warmer climate in the West Indian islands, was there necessitated to be on horseback night and day—exposed alternately to a burning sun and heavy rains—in a word, to the very extremes of atmospheric vicissitudes. During his whole residence there, however, he ate and drank well, cured his phthisis, and died of dysentery 25 years after his arrival at Martinico.

M. Bidoult, another medical man doomed as labouring under phthisis, also sought to re-establish his health by a residence in the same place; he followed the mode of life of his countrymen Noverre, entering into all the excitements and good living to be had. How this intrepid *viveur* ended his days M. Rufz does not mention.

A diet of mutton chops and generous wines, says M. Bricheteau, again, may no doubt be beneficial in certain cases of pulmonary tuberculosis, but the digestive system in such persons must not have lost its energy. "We cannot sufficiently disapprove," says he, "of that advice which does not hesitate to recommend substantial food, tonics, and excitants to those unfortunate patients who already can scarcely digest milk or soups, and who are reduced by colliquative diarrhœa. Among patients treated in this manner, we can adduce one instance where the alimentary canal was so injured by perseverance in a regimen of this kind, that death became accelerated, and was due to rapid tuberculization of the intestines, rather than to any softening of the tubercular deposits at first formed in the lungs."

M. Andral, in his additions to the "Treatise of M. Laënnec," when speaking of individuals affected with tubercle, and in whom a tendency to inflammatory conditions exists, says: "In these cases a milk diet is of service;" while on the other hand, in reference to the more asthenic examples, he says: "Among such cases the milk diet is contra-indicated; and if it is attempted, it soon has to be laid aside, as the health suffers, and the time shortly comes when such diet ceases to nourish." Thus, according to the judicious observations of M. Andral, two different morbid states proper to phthisis must regulate the choice of aliment in this disease; far from being of a uniform and invariable character, the *therapeutique* of tuberculosis differs so much as to be the cause of great difficulty in its treatment, and in this way, however much authority M. Latour's name may possess, we cannot believe that generous or stimulating diet and salted milk should be the best method of treatment in all cases of phthisis.

The tonic method of treatment in this disease is by no means new; it was recommended by Morton, Portal, Raullin, etc., but by them only in particular cases. This method, no doubt, may be of service in cases where the patients are scrofulous or cachectic, or born of tuberculous parents, and where it is desirable to alter the constitution. But we know that the lining membrane of the stomach, partaking of the morbid condition existing elsewhere, may become atrophied or hypertrophied, ulcerated or softened, and in that way give rise to dyspepsia of a most intractable character, and rejecting all kinds of regimen—not excepting that of an exciting quality. Analogous disorders attack the intestinal canal, and all aliment in such circumstances becomes a cause of diarrhœa and debility. Phthisis may be apyretic, but is more frequently accompanied by fever, and sometimes by hæmoptysis, because the tubercles in the lung are only one result of a cause which induces an inflammatory condition beyond them, and extending to other organs, which become irritated, congested, and inflamed. The usual custom is to combat this state by an unexciting regimen; but, according to M. Latour, this is a mistake. Now, can the proper mode of treatment consist in stuffing such patients with soups, animal food, wine? The fact is, that this procedure may answer well enough in such cases of scrofula as require support and stimulation, and in whom the leucophlegmatic condition amounts to cachexia; but in pulmonary cases what is required in general, is a regimen of a mild and refrigerent description. M. Latour, in addition to tonic and excitant remedies, employs salted milk, *le lait salé*, in large doses; but, laying aside the contradictory nature of these modes of treatment, it becomes a question, how far this species of milk diet is of service in phthisis. By its composition, milk is a species of food complete as it were in itself; it is digested and assimilated without increasing the rapidity of the pulse, without augmenting the natural temperature or stimulating any organ except the kidney, and it is therefore well entitled to be considered as a mild and unstimulating form of aliment, and one well adapted for patients of a nervous or sanguine habit, or those who have been emaciated by irregular life or by tuberculosis. At the same time, it must be kept in mind that milk is a species of food which disagrees with many persons, and that bilious patients in general have a repugnance to it; and, further, we must recollect the numerous adulterations to which it is frequently subjected, should we wish to prescribe its use in phthisical cases in large towns. As for any choice existing between the different species of milk, this seems to be merely an imaginary matter.

Does the addition of salt add in any way to the therapeutic virtues of milk in phthisis? M. Latour asserts that it does so: M. Louis doubts this alleged fact, and I agree also in doubting its effects. "I have given sea salt," says M. Louis, "to all the patients received in my division of the Hôtel Dieu, and in no case have I observed any amelioration of the symptoms, or any appreciable effect whatever, which I could attribute to the use of this remedy. I may state that these patients were for the most part fed almost exclusively on roasted meat—at least so far as their stomachs would bear it."

If it were true that marine salt were really a solvent of tubercular matter, we should find the inhabitants of the sea coast, as well as also soldiers and sailors—who are constantly using salt provisions—to be free from phthisis. Unfortunately this is not the case. But I would not wish to appear bigoted in my opinions, either for or against a remedy which I have not put to the test. Among the various contradictory opinions prevailing in regard to the treatment of tuberculosis by salt, time alone, by giving an opportunity for the observation of new facts, will decide the efficacy of such treatment. In regard to the method of treating such cases by high and irregular living, I doubt that, with the exception of certain anomalous cases, this style of cure can only be of service in such suspected tuberculosis as existed in the patients of Martinico. —*Ed. Med. Journ.*, Aug., 1858, from *Gazette des Hôpitaux*, Jan. 28, 1858.

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20. *Diabetes from Cerebral Diseases.* By M. Leudet.—Since the experiments of Claude Bernard have shown that irritating a limited portion of the cerebral substance is followed in animals by the production of sugar in the urine, the attention of physiologists and pathologists has been drawn to the question of how far some of the cases of diabetes met with in practice may be due to cerebral disease. As a slight contribution to the investigation of the subject, M. Leudet relates four cases, in which he believes this relationship is well made out; and from a consideration of the particulars of these, and of observations made by other practitioners, he comes to the following conclusions: 1. Diabetes arises, in certain cases, from organic changes in the brain. 2. Its commencement may coincide with that of the disease of the brain, or it may take place subsequently. 3. Cerebral disease attended with convulsive movements are those which are especially accompanied by glucosuria. 4. The diabetes may be temporary,

manifesting itself during an exacerbation of the cerebral disease, and disappear with this. 5. The symptoms of glucosuria differ, in these cases, in nowise from the ordinary disease developed under the influence of other causes. 6. The diabetes does not derive any aggravation from its antecedent. 7. The treatment should be that of ordinary diabetes.—*Med. Times and Gaz.*, July 10, from *Gazette Médicale de Paris*, Nos. 10–12.

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21. *Rationale of the Saccharine Treatment of Diabetes.*—Dr. JOHN SLOANE, in a paper read before the Leicester Medical Society (April 20, 1858), gives the following rationale of the saccharine treatment of diabetes:—

"Glucose, the variety of sugar found in the urine of diabetics, is generated in the livers of animals throughout the animal kingdom, almost wholly irrespective of the nature of their food. The glucose secreted by the hepatic cells passes into the hepatic veins, thence into the inferior vena cava, and through the right side of the heart to the lungs, where, being exposed to the atmosphere, it sometimes completely disappears. M. Bernard has found sugar in the livers of mammals, of birds, of reptiles, of fishes, of molluscs, and of articulated animals. He has found it in omnivorous, herbivorous, and carnivorous animals. That the secretion of sugar is independent of the nature of the food, he proves by many experiments, of which I shall mention the following. He fed dogs exclusively on flesh for six or eight months; and when they were killed, at the expiration of that period, he found as much sugar in their livers as in those of dogs fed upon a mixed diet. Owlets taken in their nests were fed exclusively on raw bullock's liver for three months, and were then killed; their livers always contained the normal quantity of sugar. Two dogs were fed solely on flesh, three on both flesh and bread, and two on amylaceous or saccharine food; they were all killed at as nearly as possible the same period of digestion, and the results of the chemical examination of their livers showed that the quantity of sugar secreted did not depend on the nature of their diet.

"Rollo recommended the use of fat for diabetics. M. Thenard and Dupuytren made them eat lard. We have fed dogs with lard and axunge; and we have found this very curious fact, that, under the influence of this alimentation, the sugar diminished in the liver absolutely in the same manner as if the animal had been kept fasting. In dogs to which M. Bernard has given nothing but pure water, he has found the secretion of sugar kept diminishing, and it ceased to appear about three or four days before its death. For the first thirty-six hours, the quantity continues considerable, but during the following days it diminishes very rapidly.

"A dog, having fasted thirty-six hours, had a copious repast of boiled sheep's head, and, three hours afterwards, was killed. The blood in the portal vein, previous to its entrance into the liver, contained no trace of sugar; whereas, in the blood from the hepatic veins, there was a considerable quantity. This experiment, writes Bernard, would alone suffice to cause one to admit, as a natural and necessary conclusion, that the sugar is produced in the liver; yet we have accumulated proofs of every kind about this proposition: and we have shown that the hepatic tissue constantly contained sugar, and that it was the only tissue of the body which offered this character.

"In an animal fasting, the blood which arrives at the liver presents no trace of sugar; that which leaves it contains a considerable quantity. Inversely, the blood which arrives in the lung contains sugar; and that which leaves it presents no trace of this substance. The sugar in this physiological state remains hidden between the liver and the lung, and does not show itself at the exterior. This statement is true only in an animal fasting. When the digestion commences, the quantity of sugar gradually augments; yet during the two or three hours following the ingestion of aliment, notwithstanding the increase of the saccharine secretion, all the sugar can be destroyed before it arrives at the arterial system; and it is only after the lapse of time that the production of sugar surpassing the limits of destruction becomes temporarily excessive in the organism. At this period of digestion, one finds sugar in all the vessels of the body, arterial and venous, and even in the renal arteries; but the proportion is too slight for any of the sugar to pass in the urine. Yet we shall see that, under certain physiological circumstances, the quantity of sugar can be increased to the point that it passes off in the urine without the animal being diabetic. Under the ordinary circumstances of digestion, this species of saccharine overflowing is manifested equally with animal or amylaceous diet, and it lasts about three or four hours. It is not less than six or seven hours after a meal that the excess of sugar in the blood commences to disappear, and that the equilibrium between its production and its destruction tends to re-establish itself as before digestion. This species of oscillation, which the glycogenic function presents, it is very important to know; for in the pathological state (diabetes) we find exactly the same phases, with the exaggerations we should expect in this malady. Different observers—Rayer in France, and Traube in Germany—have remarked that there are diabetics who do not pass sugar in their urine, except at the time of their digestion; and that, in the interval, their urine does not contain sugar. This phenomenon can be reconciled very naturally with the physiological fact which has been pointed out to you. There is nothing essentially different between the normal state and the pathological symptom, save the intensity of the phenomenon caused by a deviation of vital activity.

"The sugar is formed from the albuminous substances; and this sugar is the result of the physiological action of the liver upon those principles, which are divided so that their oxygen, hydrogen, and carbon, are grouped so as to form sugar, whilst their azote enters into other combinations, and probably into the azotized principles of the bile. One does not know, indeed, any other origin for the saccharine matter, which cannot be produced in the intestine by digestion. Experiment has shown us that, during alimentation, by means of albuminous substances, the intestine and the blood of the portal vein never contain saccharine matter of any kind. Neither gelatine nor flesh produce saccharine matter in the intestinal tube by the known digestive processes. The amylaceous matters taken as food enter as sugar into the portal vein, and, arriving at the liver in this state, are then destroyed by this organ, and changed into another matter, which has every appearance of a fatty substance converted into an emulsion *par une matière protéique spéciale.* We have said that the sugar introduced into the intestinal tube does not augment the quantity of this matter contained in the liver, but that it is there destroyed, and causes the appearance of an emulsive substance. That the sugar introduced into the intestinal canal does not augment the quantity of this matter contained in the liver, M. Bernard shows by the following experiments. He takes two rabbits, whose urine he first finds, by testing, to be free from sugar. Into the stomach of one he injects a quantity of sugar in solution, with some ferrocyanide of potassium. Beneath the cellular tissue of the other he injects half the quantity of an exactly similar solution. He examines their urine an hour afterwards, and he finds in that of the first not the least trace of sugar, while the urine of the second presents it in considerable quantities. But you may say that this difference may be accounted for by the intestinal absorption being less rapid than the subcutaneous; but in both the ferrocyanide of potassium was readily detected in the urine. This will prove that the absorption is equally effectual in the intestine as under the skin, but that, in the first case, the solution has abandoned one of its constituents, the sugar, in traversing the liver; whereas this has not taken place in the second instance. He arrives at similar results in the following experiments. Through a small opening in the abdomen of a rabbit, he injects a quantity of the same solution into one of the branches of the portal vein; and into the jugular vein of another rabbit he injects the same quantity of the same solution. It is clear that, in this mode of operating, we cannot have any difference in the absorption, as in both cases we introduce the substances directly into the blood. Nevertheless, we obtain exactly the same result; that is to say, that in the rabbit, in which we injected by the jugular, the sugar has passed into the urine with the ferrocyanide of potassium, and with very great rapidity; whilst in the rabbit injected by the portal vein, the ferrocyanide of potassium alone will have passed into the urine, where one cannot find the least trace of sugar. These experiments are very conclusive. Bernard proves by experiment that starch, taken as food in the intestine by the influence of the pancreatic juice, becomes converted into sugar; and this passes into the portal vein. That sugar is destroyed by the liver, receives further confirmation, he states, by the facts known in the fattening of cattle. You all know that animals fatten most by the use of food in which starch predominates; that the geese and the ducks, in which the fat livers are artificially produced, are gorged with a *pâté* of maize or other amylaceous food: that the fat formed by an animal is not in proportion with the adipose matter which it takes; that, on the contrary, the animals which only eat fat, far from becoming fat, get lean rapidly. Hereafter it is not only the biliary secretion which we shall have to look upon in the liver; it has two other functions of capital importance—one the production of sugar, which is dependent upon the aliment containing albuminous matters; the other, the production of fat, which is dependent upon the amylaceous and saccharine matters in the food.

"Cane-sugar is never destroyed; it is constantly eliminated by the urine when it is injected directly into the blood; but this sugar, when in the intestine, is in part, at least, transformed into glucose. The latter, on the contrary, injected into the blood, can be destroyed in certain proportions.

"When we prick the mesial line of the floor of the fourth ventricle, in the exact centre of the space between the origins of the auditory and pneumogastric nerves, we produce an exaggeration of the hepatic (saccharine) function, and of the renal secretion; if the puncture be effected a little higher, we very often only produce an augmentation in the quantity of the urine, which then frequently becomes charged with albuminous matters; while, if the puncture be below the indicated point, the discharge of sugar alone is observed, and the urine remains turbid and scanty. Hence it appears that we may distinguish two points, of which the inferior corresponds to the secretion of the liver, and the superior to that of the kidneys. As, however, these two points are very near to one another, it often happens that, if the instrument enters obliquely, they are simultaneously wounded; and the animal's urine not only becomes superabundant, but at the same time saccharine. The urine becomes saccharine in from one to two hours after the operation, but seldom continues for more than a day.

"The secretion of sugar is not under the direct influence of the pneumogastric nerve; for if it be divided before irritating the floor of the fourth ventricle, sugar still appears in the urine. Bernard believes that the influence is transmitted by reflex action through the ganglia of the sympathetic.

"There is a phenomenon which is manifested, for example, when, after fasting a certain time, a great quantity of sugar is taken. The intestinal absorption then proceeds with extreme rapidity. A great quantity of sugar arrives in mass in the liver; the mechanical circulation much prevails over the chemical; the sugar is poured into the general circulation in proportion much greater than occurs in the normal state; and it passes then into the urine, where its short-lived presence can be found for a certain time.

"M. Bernard, after a great many experiments in reference to the subject, has proved that there is a species of election in the excretion of matters which pass out of the organism. Sugar is eliminated in two ways only—by the kidneys, and by the mucous membrane of the stomach. When sugar is injected into the blood of an animal to saturation, and puts it for a time into a state of diabetes, we do not find sugar in the saliva, in the tears, pancreatic juice, bile, nor perspiration; whilst the urine and gastric juice contain it in proportions more or less notable. These results entirely resemble those obtained in diabetic patients. Lehmann states, however, that he has obtained sugar from the saliva of a diabetic. The presence of sugar has been pointed out in the expectoration of diabetics. Bernard admits that sugar can be had in notable quantity in the expectoration. But, he writes, we must not confound the bronchial mucus which these patients, almost always phthisical, in the last stage of the disease expel in abundance, with the salivary secretion properly so called; it is the mucosities formed in the lung which contain the saccharine matter. Nevertheless, this fact is not constant; for M. Rayer has reported to the Society of Biology a case in which the expectoration of a phthisical patient examined by M. Wurtz did not contain sugar. Bernard proves by the following experiments the statements regarding the election in excretion of matters which pass out of the organism.

"He takes a dog with a parotidean opening, into which he inserts a tube. Nothing flows by this tube, which proves that the secretion is not continuous. By putting in the mouth some vinegar he excites the flow of saliva, which passes out of the tube rapidly in large drops. He next injects into the jugular vein of the animal a solution containing sugar, prussiate of potash, and iodide of potassium. Immediately after this injection the salivary secretion is again excited in the same way. The saliva is received into three glasses. One is examined for sugar, and none is found. The sugar, therefore, does not pass in the saliva. The second is examined for prussiate of potash, and it is not present. The third is found to contain iodide of potassium. This substance then passes immediately into the saliva, whilst the prussiate of potash and the glucose, equally soluble, cannot be found. In the saliva extracted before the injection, none of the substances exist. In the urine of the same animal after the injection the prussiate of potash is found in considerable quantity, and the iodide of potassium in small proportion. As regards the sugar, there is none yet, but we shall find it presently. It requires an hour or more for the sugar to appear in the urine.

"The urine then eliminates all these substances in a manner more or less rapid. The prussiate of potash appears first and the glucose last.

"There is another secretion in which the presence of sugar can be found; this is the gastric. The passage of the sugar into the stomach has surprised most of the observers who have seen long since that when diabetics vomited, although they had eaten nothing but flesh, the vomited matters were saccharine. When it was believed that diabetes proceeded from a perversion of the digestive functions, it was considered that the flesh was changed into sugar in the stomach. But one need not now be mistaken; the flesh is not saccharine. Bernard himself has observed that, in diabetics who vomit fasting, in the vomited matters the presence of sugar could be found. But this has only occurred when the disease is at its greatest intensity; and in all those cases, even in the animals which have been rendered artificially diabetic, it is much more difficult to obtain the passage of glucose into the gastric juice than into the urine.

"The sugar is formed, as we have seen, at the expense of the albuminous substances. In the healthy man it is clear that a part only of these matters is consumed for this purpose. The diabetic who forms much sugar expends a very large quantity of azotized material; the blood is impoverished; and, although the patient eats enormously, he gets thin like a man badly nourished. The liver takes in a manner the ration of the other organs, which undergo a considerable attenuation, because the albuminous elements are transformed into sugar.

"M. Bouchardat has proscribed the use of amylaceous and saccharine matters in the food of diabetics. The facts which Bernard has himself witnessed in the practice of M. Rayer prove clearly the utility of azotized aliment. In the regimen of these patients, writes Bernard, vegetable aliments ought to be forbidden, as it is evident that they augment the functional activity of the liver. You know, also, that they are excitants of the kidneys; that they are much more diuretic than animal matters. Thus all the herbivora pass much more urine than carnivorous animals. In the azotized regimen diabetics have the advantage of food which is not diuretic.

"I have at great length reminded you of M. Bernard's views regarding the formation of sugar in the animal economy. As some of them are of so novel a character, and so little in accordance with the notions formerly held, I have thought it advisable to mention the experiments upon which he founds his opinions. That they will, upon further investigation, be more or less modified, is not improbable; but they have been very generally received by the most distinguished physiologists and pathologists.

"From M. Bernard's investigations, we learn the following facts of importance in reference to the saccharine plan of treating diabetes:—

"1. Sugar may be rationally administered to diabetic patients, inasmuch as the sugar found in the general circulation is almost always secreted by the liver, and as sugar introduced into the intestinal tube in its passage through the liver is there altered and converted into an emulsive substance, which serves to fatten these patients, and thus to counteract their tendency to emaciate.

"2. Substances which contain glucose—such as honey and fruits, should be given to diabetics in preference to those containing cane-sugar, because the latter is not destroyed when injected into the blood, but is constantly eliminated by the kidneys; whereas glucose can be destroyed in certain proportions.

"3. Cane-sugar would be beneficial to a certain extent; as when taken into the intestine it is in part at least transformed into glucose; but if given in too large proportions to be thus completely transformed, the disease would be probably aggravated by the presence in the blood, and subsequent excretion by the kidneys, of the former variety of sugar.

"4. The glucose should be given in moderate quantities at a time, and frequently, rather than in large quantities at long intervals; because, when much sugar is taken fasting, it is absorbed too quickly to admit of its complete destruction in the liver, and it passes into the general circulation, whence it is eliminated in the urine."—*British Medical Journal*, May 8, 1858.

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22. *Researches on Gout.*—Dr. A. Garrod communicated to the Royal Medical and Chirurgical Society (June 8th, 1858) the result of his researches on gout. The author divided his communication into two parts. In the first, were detailed the results of his analyses of the urine in the different forms of gout; the second was devoted to the consideration of the influence of the different forms of colchicum upon the urinary secretion. After describing the method of analysis employed in arriving at his results, and speaking of the opinions usually held upon the subject of the urine in gout, Dr. Garrod proceeded with the first part of his paper, the cases in which he subdivided into three classes.

1st Class.—Cases of acute gout, occurring in patients most of whom, in the intervals of the attacks, enjoyed pretty good health. About thirty analyses for uric acid, made on the twenty-four hours' urine of several different patients, were detailed, and a few for the determination of urea; and from these, the following deductions were drawn: In the earlier stages of acute gout, the urine, for the most part, is small in quantity, and the uric acid, measured by the twenty-four hours' secretion, diminished; that this acid is thrown out in much larger quantities as the disease becomes mitigated, and that these amounts, even above the patient's daily average, may be passed, forming sometimes critical discharges; and, lastly, the acid again becomes lessened, although not to the extent which occurs either just before or at the commencement of an attack. That the urea is usually thrown out in about the normal quantities, although its free elimination by the kidneys is often somewhat impeded, and, in consequence, the blood contains a small excess, which may possibly explain, in some manner, one peculiarity of gouty inflammation when it attacks superficial parts, namely, the presence of œdema and the subsequent desquamation of the cuticle. That occasionally a trace of albumen exists in the urine, but very seldom, compared with its occurrence in the chronic forms of the affection. The 2d class included cases of chronic gout, the majority of which were not suffering from any urgent symptoms, but many were afflicted with some of the sequelæ of the affection, as shown by the concretions of urate of soda upon different parts of the body, and the stiffened condition of the joints. More than sixty analyses for uric acid were given in this class, made upon the day's urine of fourteen different individuals, and numerous determinations of urea were also detailed. The deductions from the observations may be thus summed up: The urine in chronic gout is usually rather pale in colour, below the average tint in the healthy subject, of low density, and increased in quantity. The amount of urea, except in extreme cases, the same as in health (due account being taken of the diet of the patient at the time the urine passed). The uric acid was very much diminished indeed, and subject to excretion in very varied quantities at different times; and, lastly, the presence of a small amount of albumen is exceedingly frequent. Deposits in the urine are not of common occurrence in these subjects; but they occasionally occur on the cooling of the fluid, sometimes in the form of urate of soda or ammonia, at other times crystallized and more or less coloured rhombs of uric acid. Class 3.—Urine of individuals who had suffered more or less frequently from attacks of acute gout, of varying degrees of intensity, examined at the time of complete freedom from any symptoms of the disease. Several determinations were made on the urine of six individuals, and the following results arrived at: In no one of the six patients' urine did the amount of uric acid reach the quantity usually considered to be the average in health; in most of them it was far below, and it would appear that the kidneys in such individuals are apt to lose some of their excretory power for this body, a circumstance which must necessarily render the blood impure, and account for the liability which such patients possess to periodic visitations of this malady, and the great difficulty of effecting a radical cure of the disease.

Part 2.—Devoted to an examination of the influence of colchicum upon the urine. The usual opinions held by different authorities, as Christison, Chelius, etc., upon the modus operandi of this drug, were first related, and many of the analyses brought forward in their support were shown to be very fallacious, the error arising not from any fault in the analyses themselves, but from small specimens of urine, passed at particular times of the day, being examined, and no account taken of the twenty-four hours' elimination. Between fifty and sixty analyses, showing the amount of the uric acid eliminated, were given, together with numerous determinations of the urea. The results of these observations on the action of colchicum were as follows: In one case, where no gouty affection existed, and no febrile disturbance was present, colchicum appeared to have the effect of slightly diminishing the quantity of urine, and likewise of diminishing somewhat the excretion of uric acid. In a second case, similar to the above, the influence of the medicine was notably to diminish the quantity of urine, the uric acid being slightly increased, but the increase was less than a quarter of a grain per diem. In case 3, a gouty patient recovering from an acute attack, the uric acid was somewhat increased during the administration of colchicum, but not in a greater degree than frequently occurs under such circumstances when no medicine is given. In case 4, both the urine and the uric acid were diminished by the influence of the drug; and so on for the other cases. The author considered, as the result of his analyses, 1st. That there is no evidence to prove that colchicum produces its effects upon the system by causing the kidneys to excrete an increased amount of uric acid, but that, in fact, the reverse would seen to hold good. 2d. That colchicum is not always a diuretic, but often diminishes the renal secretion, especially when its action is exerted upon the alimentary canal. 3d. That colchicum has no marked influence on the excretion of urea. An appendix to the paper contained the results of seventy-two analyses, performed on consecutive days, of the urine of a gouty patient; and the results exemplified, in a marked manner, the peculiar mode in which uric acid is frequently eliminated in such cases, and also tended to confirm the conclusions arrived at with respect to the action of colchicum upon the excretion of this principle.—*Med. Times and Gaz.*, June 26, 1858.

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23. *Abdominal Typhus.*—From 100 dissections, from upwards of 1000 cases, Dr. LEBERT, of Zurich, deduces the following results:—

Intestinal affection is not always present, and bears no relation to the intensity of the disease—appearing rather to be a co-effect of the fever than sufficient for its explanation. In fatal cases, the intestinal affection has not only formed a slough or sore, but has even frequently ended in resolution; and it is not always easy to discover whether the intestinal affection has entirely failed, or whether it has only been completely resolved. The intestinal affection of typhus bears a very strong resemblance to that of cholera, only in the latter there is usually more serous infiltration; it consists entirely in an increased formation of the normal cell-elements, and there is no such thing, as far as our author has seen, as a specific typhus exudation; while so many other diseases which have a typhoid condition, as pyæmia, severe icterus, meningitis cerebrospinalis, and the grave cases of acute exanthemata, are accompanied by swelling of the intestinal glands and the spleen, that we are involuntarily led to the conclusion, that there is in many infectious diseases a peculiar connection between the pathological poisoning and those glands whose office it is to prepare the blood elements; and therefore the intestinal alterations in typhus have a much deeper and more general signification than is usually believed. From the eighth to the eleventh day, the cellular infiltration of the mesenteric glands, also that of the isolated and agminated glands, is very distinct; they are soft and swollen, as are also the glands of the large intestine. Very soon erosions, ulcerations, and other anatomical alterations attendant on intestinal catarrh, occur, which are most frequently observed from the eleventh to the fifteenth day; and in this very period, also, the phenomena of resolution are often observed. But the intestinal alterations of typhus are very far from being bound down to typical phases; and there is even an occasional disproportion between the extent of the disease in the isolated and agminated glands, the latter being peculiarly its seat, while it is often entirely wanting in the former. In the course of the third week the intestinal alterations are at their height; in one case only, pus was found in the mesenteric glands, partly infiltrated, partly in the fluid state (as an abscess). In the fourth week the ulceration generally continues, the catarrh of the colon and ileum already retrogressive; the marrow-like infiltration of the mesenteric glands at its height, and partly retrograde. One man, however, dead on the twenty-fourth day, had only a few agminated glands slightly swollen, and the seat of superficial ulceration. Another case, dead after the twenty-eighth day, showed undeniable symptoms of resolution without ulceration; the mesenteric glands were partly swollen, partly retrograde; Peyer's patches of a slaty hue, firm and granular, partly shrivelled, and only one small ulcer in the processus vermiformis. Tendency to cicatrization was only once observed on the twenty-fourth day. This stage occurs generally much later than authors have supposed. In the fifth week we have for the first time a grayish coloration of the edges of the ulcers, which now begin to fine down, but show only exceptionally a tendency to reparation. In this week the author observed three cases of resolution without ulceration, in only one of which was there trifling ulceration. In one case, dead after the thirtieth day, Peyer's patches were still slightly swollen, grayish yellow, covered with a few small brown ecchymotic spots; the neighbouring mucous membrane hyperæmic; the spleen large and soft; the mesenteric glands enlarged. Another case died on the thirty-fifth day; the spleen was still large and soft; most of Peyer's patches had a slaty-gray appearance; and only a few isolated glands showed traces of cicatrized ulcers. During this week the mesenteric glands are generally partly diminished in size, partly soft and swollen, and also of a slaty hue, particularly on the surface, whilst the interior is of a dull-yellow, cheesy aspect, as of shrivelled nuclei, already undergoing molecular disintegration; these disintegrated elements are probably subsequently absorbed, and the glands return to their normal state. During the sixth week, reparation proper commences; the edges of the ulcerations long retain their slaty hue, and the different portions of the intestinal canal are unequally advanced; the mesenteric glands are by this time restored to their normal state. In this week also the author found a case of undeniable resolution without trace of ulceration; Peyer's glands being slaty in hue, partly reticulated, partly granular and shrivelled. In the seventh week complete resolution is the normal condition; yet our author found three cases in which, although the edges of the ulcers were slate-coloured, their basis showed no trace of healing. Such are the cases in which tardy perforation occurs, and those also in which the patients sometimes die in the third month from sequelæ. Once in the eleventh week, and another time after three and a half months, our author found cicatrization uncommenced; in both cases a diphtheritic diarrhœa, accompanied by numerous ulcerations in the colon, was present; our author supposes that fatty degeneration of the textural elements of the ulceration is the cause of its not healing. He mentions as very remarkable two cases, one dead in the ninth week, the other in the eleventh, in both of which distinct villous granulations (Zotten) were produced on the surface of the sore, while in every other case the cicatrix had a striped fibroid appearance, with scattered gray pigment granules and corpuscles; such cicatrices were also distinctly vascular. As one-fifth of our author's recorded observations comprised cases in which the intestinal alterations failed entirely, were very trifling, or ended in resolution, bearing no relation to the severity of the disease, which severity bore also no relative connection to the typhoid diarrhœa, so he concludes that the distinction between abdominal typhus and exanthematic typhus without intestinal alteration cannot be strictly defined; much must still be left for future observers. With respect to the other textures and organs, our author found, 1st, an important relative frequency of peritonitis in ileo-typhus; nine cases of perforative, and seven of simple peritonitis, in 100 deaths; besides numerous unmistakable recoveries from similar accidents, extending in time from the seventh day to the fourth month, being most frequent in the second month. The splenic enlargement, more or less constantly present, bore no relation to the intensity of the typhous process. Splenic softening, depending on hyperæmia and increased cell-formation, was a much more regular concomitant. The liver, in more than one-fifth of all cases observed, was more or less fatty; and in every case analyzed by Professor Städeler, leucin and tyrosin were found, while, so far as known to our author, sugar has not been found in a typhous liver; so he considers it extremely probable that alterations of the liver not only exist during the typhous process, but probably have an intimate relation to it. The kidneys in the first two weeks were somewhat swollen and hyperæmic; later in the disease the kidneys were twelve times found to present more serious alteration; the size normal, or but slighly increased; the cortical substance decolourized, with here and there vascular points and stripes, the decolorization intruded partly on the pyramids; and here there was found, first, on the fourteenth day, generally about the fourth week, increased cell-formation in the convoluted ducts, mixed with a fine granular, albuminous infiltration, which subsequently seemed to undergo fatty degeneration; in most of these cases no albumen had been detected in the urine during life. A few cases of ileo-typhus complicated with Bright's disease recovered. The heart in the later stages of typhus becomes flabby, thin and pale, and frequently fatty, proving thus a probable source of death in protracted cases. Ulceration of the larynx, observed by Rokitansky, Vogel, and Rheiner, were never seen at Zurich; pleurisy was present eight times; once the typhus commenced with pleurisy, which at death, on the forty-sixth day, was so far healed that only adhesions and increased injection remained. Occurring at an early period, it generally terminated favourably; and even as sequela, which it most frequently was, it was only then very serious when double, or the patient much reduced. The most frequent alteration of the lung was hyperæmia, with dark red, violet, or a more brownish colour, compact appearance, and a smooth cut surface, with distinct collapse of the lung-cells. This condition has been termed carnification or splenization when extensive, and atalektasis when more circumscribed. The author observed this condition twenty-one times diffuse and lobar, and six times scattered and lobular. The diffuse form is much more common, if to it we add those numerous cases in which hypostases showed a tendency to pass into carnification. The lobular atalektasis had a direct relation to the bronchitic affection, and was most frequent when that was severe.

Recent emphysema is also by no means an infrequent concomitant of typhus. Lebert observed it thirteen times, and connects it with intense capillary bronchitis. Pneumonia was a rare complication, occurring but five times—twice lobular, and three times general and lobar; apoplexy of the lung occurred eight times. Catarrh and bronchitis, with their sequelæ hypostasis and carnification, seem to belong to the typhous process; while laryngitis, pleurisy, pneumonia, etc., are only accidental complications or sequelæ, and tuberculosis and typhus seem to a certain extent to antagonize one another. The nervous centres afford no anatomical explanation of the serious cerebral symptoms so often occurring in ileo-typhus. Meningeal hyperæmia, and œdema under the arachnoid, are very frequent. Lebert found, however, only thrice increase of the ventricular fluid, and also three times effusion of blood in the membranes, and twice effusion of blood in the brain substance itself; once there was meningitis with sero-purulent exudation on the surface of the brain.—*Ed. Med. Journ.*, Aug., 1858, from *Prager Vierteljahrschrift, f. d. Prak. Heilk.*, 1858.

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24. *Incubation of Measles.*—The period of incubation of measles has been variously estimated. Dr. Kerschensteiner, Assistant in the Munich Hospital for Children, has endeavoured to fix it by observing the day on which the eruption appeared on the second affected child of a family, reckoning from the day it appeared on the first; and only such cases were collected and tabulated as could be clearly shown to have no communication with any other measle patients. Of 37 cases so collected, the eruption appeared in 34 between the 10th and 12th day.—*Edin. Medical Journal*, June, 1858, from *Bayer. ærztl. Intell.*

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25. *Inversion of the Body for the Relief of the Symptoms produced by the Passage of a Renal Calculus along the Ureter.*—Prof. Simpson exhibited to the Edinburgh Medico-Chirurgical Society (May 5, 1858) a small oblong renal calculus, from a patient who had passed them at different times, and always suffered terribly during their transit from the kidney to the bladder. This patient had been now twice relieved of the agonizing symptoms accompanying the passage of the calculus by inversion of the body. Prof. S. had subjected her to this treatment in consequence of his belief that the passing calculus, falling down into, and becoming impacted in the ureter, acted at its point of arrestment as a pea-valve, and by its accumulating the urine above, or in the pelvis of the kidney and higher portion of the ureter, led to the accompanying distress by the morbid distension of these portions of the urinary ducts. When the body was inverted, and the affected side manipulated, the calculus probably fell backward, and consequently upwards, by its own gravity. At all events, whatever be the explanation, the practice in this and in one other case had immediately relieved the patient. He had seen partial relief from changed position in one case also of gallstones. Position was a more important therapeutical agent than was generally supposed, not only in medicine, but also in surgery and therapeutics. Several years ago—and shortly after the famous case of Mr. Brunel—Dr. S. saw, with Dr. Patterson and Dr. James Duncan, a case in which a shilling passed into the windpipe, and where upon inversion of the patient the shilling fell back into his mouth, thus saving the patient from the operation of tracheotomy. Dr. Duncan had published a full account of the case. In prolapsus of the umbilical cord in labour, the mere gravity of the cord in the usual supine position of the patient was no doubt one great cause of the difficulty of retaining it in utero, above the head or presenting part of the child, when once returned. But some late cases and observations proved that the return and retention of the cord could be effected with comparative facility, if the aid of position was called in, and the patient was placed upon her face, or upon her hands and knees, till the presenting part filled the brim of the pelvis; for in this prone position the cord gravitated toward the fundus uteri, instead of towards the os.—*Edinburgh Medical Journal*, July, 1858.

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26. *The Diagnosis of Deafness.* By Dr. Erhard, of Berlin.—By careful observation of many cases of normal hearing, or of one-sided deafness, the author came to the conclusion that almost every possible alteration of the external passages or of the tympanum, if not excessive, might coincide with perfect audition. He even observed a case of congenital absence of the membrana tympani, together with that of the malleus and incus, without perceptible influence on the power of hearing. He was, therefore, led to seek for new and better diagnostic marks in the phenomena of audition itself, as manifested in the deaf. With this view he employed a series of watches, of varying intensity of stroke. For normal hearing, four conditions are necessary: 1st. Complete integrity of the acoustic apparatus; 2d. Complete integrity of the nervus acusticus, from its central origin to its finest peripheral branch on the scala tympani; 3d. Complete integrity of the organic dynamic relations of the auditory apparatus; 4th. Complete integrity of the sensorium. Any alteration in these conditions produces a corresponding alteration in the power of hearing.

As every material conducts sound more or less perfectly according to acoustic laws, so the impulse of the sound wave may reach the acoustic nerve in a variety of ways; and not only through the tympanic cavity, but also through the bones of the head generally. Therefore, if we hermetically close our ears, and press an ordinary watch firmly on any of the bones of the head, its tic-tac will be heard clear and distinct; and this holds generally good from youth to middle age. Above forty, this fact is very much modified, according to acoustic laws, from alteration in the bones affecting the homogeneousness of their texture. If we experiment in a similar manner on deaf persons, we shall find that some who hear the tic of a watch at a tolerable distance, hear little or nothing through the bones of the head, the meatus being stopped; while others, who cannot hear a watch at all in the ordinary way, hear it clearly and distinctly through the bones of the head. In all such cases, the auditory nerve must be sound, and the obstacle to hearing must lie in some acoustic failing in the conducting apparatus external to the labyrinth. The converse of this, however, does not hold. Those who cannot hear the tic of the watch through the bones of the head, have not of necessity unsound auditory nerves, but may be in one of two conditions: 1st. The auditory nerve may be partially or totally paralyzed by organic alterations affecting its origin, course, or expansion on the scala tympani; 2d. The auditory nerve may be perfect in structure and power, but fettered by some obstacle, and when this is removed, hearing at once returns. The author has observed complete deafness of this character occasionally to depend on the pressure of cerumen on the tympanum, either as a reflex phenomenon of that pressure, or perhaps the pressure itself mechanically forces the tympanum inwards, and with it the stapes, so compressing the fluid of the labyrinth as to render temporarily impossible those vibrations of the zonula membranacea of the cochlea upon which hearing depends. This acoustic test loses somewhat of its value in cases of deafness on one side alone; as, though the sense of hearing be completely lost on one side, the patient may yet, *with the other ear*, hear the tic of a watch in contact with the mastoid process of the deaf side, provided the conducting power of the bones of the head be very good; yet even this deception may be avoided, by remembering that, of the two great classes into which deaf patients may be divided—the *acoustic* and the *nervous*—the first will always be able to hear the tic of a watch through the skull bones, the latter never; and to this, adding the following corollary, that, *as every substance conducts sound, though in different degrees, therefore no acoustic deafness can ever surpass a fixed degree determinable by experiment.*

The author asserts that he has never seen a case of acoustic deafness, in which his watch, No. 1, was heard through the skull bones; but that No. 2 was also heard at least three inches, and No. 3[1] ten inches, from the entrance of the meatus. Adhesion of the eyelids causes blindness with a perfect optic nerve, because they are impenetrable by the light; but closure of the external meatus, absence of the tympanum or Eustachian tube, cannot of themselves produce perfect deafness, because every material conducts sound. When, therefore, we find a case of deafness in which, though watch No. 1 is heard through the skull bones, watch No. 2 is not heard in front of the meatus, and No. 3 only at a scarcely appreciable distance, we may conclude that the deafness is nervous, and that the tic of the watch is conducted by the bones to the sound ear, and heard by it. The degree of nervous deafness may vary with its cause; and we may determine this degree by a careful appreciation of the manner in which a series of watches, of varying intensity, are heard through the skull bones, and the intensity of the stroke necessary to excite the auditory nerve.

In all these experiments the external meatus of both ears must be completely closed, which the patient can do by oiling his little fingers, and pressing them well in. The watch must be *firmly* pressed on the bones; and the point selected may be varied, as, from various causes, the conducting power of the bone is often better at one point than another. One or two watches, not wound and not going, should be also kept for trial, as *they too are sometimes heard.*

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[1] The tic of No. 1 could be clearly heard about four feet from the meatus; that of No. 2, about forty feet. No. 3 was the striking of a repeater, and could be heard at about eighty feet distance by normal ears.

Numerous experiments can determine the distance at which every different watch is audible, both by normal ears and by deaf ones; and this does not vary unless from some co-existent modifying circumstances—*e. g.*, in simple deafness a case can never occur where a watch of ten feet intensity is that first heard through the bones, and yet it may be heard more than ten feet off. Nor can a watch of ten feet intensity be heard through the bones, and yet the same watch be heard only one foot from the meatus. In the first case, the conducting power of the bones, and not the nerve, is at fault; the second case must be complicated by some acoustic obstacle. The author regards hearing through the teeth as more properly a species of feeling, and of no diagnostic value.

The peculiar phenomenon manifested by deaf people of hearing better in a noise, as by a waterfall, in a concert, a mill, etc., for some time puzzled our author, till he bethought himself of testing the truth of it with his watch No. 2 in a very noisy drosky, when he found that, although normally he could hear the watch at a distance of 500 inches, now he could only hear it at a disance of six inches; while his deaf patients, wholly unaffected by the rumble, heard just so well as formerly, but no better. That deaf people hear better in a noise, he therefore considers to be untrue; and they only appear to do so, because we unconsciously elevate our voice to suit our own hearing. No phenomenon is apparently more general among deaf people than alternations in the power of hearing—having good and bad days, as it is termed; yet experiment shows that this is really true only in about 20 per cent.; the rest only deceive themselves; and the reason they think so is, that the nervous power being in us all more or less under the influence of external circumstances, particularly the weather, deaf people remark every trifling change in a faculty of which they possess so little, while normal ears, hearing in general more than they require, are not so sensitive to a slight diminution of power. Of those whose hearing really alternates, there are two great classes: 1st. Those deaf from acoustic causes, in whom the varying audition can be easily explained by physical causes; and 2d. Those peculiar cases of nervous deafness which seem inexplicable—like that young man mentioned by Abercrombie, who heard normally only when bent, and was quite deaf whenever he stood upright; or like three cases mentioned by the author, in whom perfect hearing was present when from any cause the external circulation was excited and transpiration increased, and who became deaf as they cooled down again.—*Edinburgh Medical Journal*, June, 1858, from *Prager Viertejahrschrift f. d. prak. Heilkunde*, 3er Bd. 1857.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

27. *Tetanus successfully treated with Extract of Indian Hemp.*—Mr. E. W. Skues relates (*Edinburgh Medical Journal*, April, 1858) a case of this. The subject of it was a healthy girl at Honduras, nine years of age, who was suddenly seized, April 9, 1857, with rigidity of the right arm and leg, accompanied by pain, particularly in the arm. When Mr. S. first saw her, both leg and arm were stiff—the hand flexed on the forearm, the knee semi-flexed, and the right foot turned inwards; the pulse 80, soft; the tongue white; bowels open; the countenance cheerful; and there was no difficulty in opening the mouth.

The history given of the case was—that, a month previously, she fell and cut her right wrist on some broken glass, and the wound healed quickly, without any bad symptom; that, a few days previous to her illness, she complained of pain in her back, but of no uneasiness in the cicatrix.

There was an irregularly triangular cicatrix on the ulnar border of the right wrist, over the tendon of the flexor carpi ulnaris.

A purgative was ordered, and the next day she was better. Little change occurred until the fifth day, when some difficulty of opening the mouth was observed; and by the sixth day the symptoms were well marked. There were frequent attacks of opisthotonos; the pulse was rapid and weak; the countenance was indicative of distress; and the mouth could only be partly opened with difficulty.

In consultation with Dr. Young, the public medical officer of the settlement, who kindly favoured me with his valuable advice and assistance, it was determined to use Indian hemp.

The medicine was first given in quarter grain, and afterwards in two grain doses, repeated hourly, until narcotism was induced. Strong soup, wine, and arrowroot were freely given.

The medicine produced marked relief, and was used freely—the quantity given daily varying from four to eighteen grains, and the child was kept almost constantly narcotized. The attacks of tetanic spasm became gradually less severe; and after twelve days the medicine was discontinued, and the child recovered perfectly—though, after all symptoms of the general disease had disappeared, some stiffness of the arm remained for eight or ten days.

The medicine was given dissolved in spirit, each dose being mixed with water at the time of administration. It appeared to act as a direct sedative, creating very little excitement, and did not induce constipation.

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28. *Affections of the Joints following Operations on the Genito-Urinary Organs.* By Wm. Coulson, Esq.—It is well known that certain affections of the genito-urinary organs are occasionally followed by severe disease of the joints. In the following remarks, I have endeavoured to explain the circumstances under which these secondary attacks occur. The injuries and diseases of the genito-urinary organs with which they may be connected are various. They may follow lithotomy and operations on the urethra. They may follow lithotrity; the introduction of instruments into the bladder; irritation of the urethra from the passage of foreign bodies, and gonorrhœal abscess, with ulceration of the urethra. In fact, any injury or disease which gives rise to primary suppuration in or about the genito-urinary organs of the male, may be followed by secondary articular disease. Besides these, there are joint affections, which appear to be excited by mere irritation of the same parts without suppuration.

The articular affections from the causes above mentioned present several peculiarities worthy of notice. They are sometimes purulent, sometimes non-purulent; and this distinction is well marked, the two varieties being seldom mixed in the same case. The attack of the joint sets in very soon after the appearance of constitutional symptoms. Thus it frequently happens that the joints begin to swell on the first or second day after the rigors and fever. The secondary deposits are often confined to the joints and muscles, and do not extend to the principal viscera. Notwithstanding the apparent limitation of the general disease, death ensues rapidly after the first appearance of the constitutional symptoms—on the fourth, sixth, tenth, and twelfth days.

On the other hand, many of these cases, though extremely severe, terminate by recovery of the patient; yet the joints have been extensively injured, as is shown by the anchylosis which ensues.

The cases may be distinguished into two kinds. In one, there are severe constitutional symptoms, partaking more or less of the characters of purulent infection, and followed by secondary deposits of pus. In other cases, the general symptoms are less severe, often chronic; and the joint affection is not of a purulent kind. M. Velpeau has described a third class of cases, which he ascribes to poisoning of the blood by urine of a bad quality.

The purulent affection of the joints generally sets in under the following circumstances: a slight injury has been inflicted on the genito-urinary organs, or the patient may have irritated the urethra by attempting to pass a catheter himself. Severe rigors, followed by fever of a nervous kind, ensues; and in one or two days the joints are attacked by pain and swelling. The tumefaction may increase to a considerable size in a few hours, the joint becoming red and hot. The knee, shoulder, ankles, and elbow, are the joints most commonly affected. Some of these cases terminate fatally in a fortnight; others again are chronic:

even in these the joint disease may commence as early as the second day. There are at first rigors, followed by fever. On the next day, severe pain and swelling attack some of the joints; the periarticular tissue becomes the seat of suppuration; the pus is evacuated artificially; the patient remains in a low, depressed, and doubtful state, for several weeks; but at length recovers, probably with anchylosis of some of the affected joints.

The morbid changes in these cases are various. They are usually inflammatory. The synovial membrane is injected, and sometimes lined with false membrane, and the joint contains pus; but ulceration of the cartilages is not common. In other cases, the lesions are confined to the periarticular tissues, which are infiltrated with pus; or the purulent inflammation may occupy the interior as well as the exterior of the joint, although the capsular ligament has nowhere given way. In a few cases the joint has been the seat of simple inflammation, and does not contain any pus; and matter may be discovered in joints which did not seem during life to be attacked. It is very rare to find pus in a joint which appeared healthy up to the time of death, but this has occurred in one case.

In chronic cases the periarticular swelling often contains pus, and the cartilages are softened or eroded. Indeed, we may infer that the cartilages and even ligaments have been extensively diseased from the anchylosis which ensues.

In the milder form of the disease, the joints become painful and swollen; but these symptoms are not severe, and the skin is not red. In a few days the affection may subside, and pass to another joint; hence this form is often mistaken for rheumatism. The effused fluid is sometimes purulent; in the majority of cases, we may infer that the effusion is serous, from the manner in which it disappears. I should observe that many of the acute and some of the chronic cases are accompanied by intermuscular abscesses in the limbs.

The nature of the articular affections just described is not well understood. M. Velpeau, as I have said, attributes them to poisoning by urine. M. Civiale confesses that he is unable to explain how they are produced. For my own part, I am inclined to attribute the severe cases accompanied by constitutional symptoms, and followed by purulent deposits, to the influence of pus-poisoning.

The analogy of these cases with many which occur in puerperal cases is evident. The absence of primary suppuration may be considered as a fatal objection; but to this I would answer, that the *fons et origomali*, the primary secretion of pus, which poisons the blood, has been generally found when carefully sought for. Thus I have found small abscesses along the urethra, produced by the frequent passage of instruments for stricture. I have also found inflammation of the prostatic veins. In other cases, small primary abscesses have been found in the prostate or wall of the bladder, or suppurative inflammation in the cellular tissue of the scrotum. All these are sufficient causes; and if the genito urinary organs were carefully examined in these fatal cases, it seems to me highly probable that the origin of the disease would be more frequently discovered.

The forcible use of instruments and the passage of foreign bodies may fairly be inferred to have produced some laceration of the urethra, followed by suppuration or abscesses. There are, however, cases in which irritation of the urethra is followed by a non-purulent inflammation of the joints. Here we must either suppose that irritation of the canal has given rise to abscess in some neighbouring part—an event quite possible, though not proved by dissection; or we must confess our inability to explain the nature of such cases, and class them with gonorrhœal rheumatism, to which they bear a striking resemblance.—*British Med. Journ.*, Feb. 6, 1858.

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29. *Medical Treatment and Diagnosis of Stone in the Bladder.*—Dr. A. H. Hassall, in an article in a recent No. of the *Lancet* (Aug. 21), makes some valuable practical remarks on these subjects.

"There is," he observes, "for a long period prior to the formation of a stone, a very sensible and obvious deposit in the urine; for it is only those substances, be it remembered, which are but sparingly soluble in the urine, which ever form calculus.

"Now this deposit, in the great majority of cases, although observed by the patient, is allowed to continue, and to go on unchecked, without his seeking for medical advice; and it is only when symptoms of stone have presented themselves that he is led to seek for aid; but then great mischief is already done, and the physician is called upon to treat not only the condition of the urine which has occasioned the stone, but has to endeavour to act, by his remedies, upon the stone itself. This is generally regarded as a task so difficult that the physician usually abandons it in despair, and the case is handed over to the surgeon, the stone being removed ordinarily by the extreme and heroic remedy of vivisection and forcible extraction.

"In ordinary cases, then, the physician and the patient are alike ignorant of the impending calamity; or, if they entertain any suspicion that the condition of the urine is one likely to tend to the formation of stone, they do not usually attach sufficient importance to it to make it the subject of active and immediate treatment. The presence of a stone is usually first determined by the surgeon. Again, when even the calculus is discovered, the physician is rarely called upon to put into operation the resources of his art; but the treatment generally pursued is strictly surgical.

"Now, I contend that the physician ought to take a prominent position in the treatment of stone. The conditions of the urine leading to calculus are chemical, physiological, and pathological, for all which reasons medical treatment is required.

"Further, the medical treatment pursued should not be limited to the period of the actual presence of a stone; for then, although more can be accomplished medically than is usually supposed, the best opportunity for medical treatment has passed. In fact, the treatment should be anticipative and preventive, and not merely palliative or curative.

"That is, every person whose urine contains an habitual and persistent deposit should seek medical advice, with a view to the correction of that non-natural condition of the urine which predisposes to the formation of calculus.

"The particular nature of the treatment demanded is determined, of course, by the nature and composition of the deposit, and need not here be described; that for persistent deposits of uric acid, the urates and cystine, has already been fully detailed in my Lectures, published in *The Lancet* for the first half of the current year. We would, in this place, limit the observations we have to make to some few general particulars relating to the treatment of stone itself when actually formed, and first we would treat of solvent, and especially alkaline remedies.

"These remedies, as ordinarily employed, are not exhibited to anything like the extent to which they ought to be given. As usually prescribed, they are administered in doses of from ten, twenty, to, at the most, thirty grains two or three times a day.

"This fact has been forced particularly upon my attention by the analysis of a quack remedy, called *constitution water*, and which has acquired some celebrity in the treatment of some forms of stone. It consists of impure carbonate of potash, and the dose is the eighth part of a bottle, about the size of a wine bottle, four doses to be taken daily, equal to about 184 grains, or upwards of three drachms of carbonate of potash, a quantity which, in some cases, may be greatly exceeded, with advantage.

"Now, the doses of the other alkalies, alkaline carbonates, citrates, acetates, and tartrates, and, indeed, of nearly all the solvent remedies employed in the treatment of stone, may be increased in like proportion, and with similar advantage.

"Another very important deficiency in the present mode of treating stone is, that the remedies resorted to, being usually only administered by the mouth, are conveyed to the stone in the bladder by the circuitous route of the circulation; in the blood, of course these remedies become much diluted, so that they reach the bladder in a greatly weakened form. Again, administered freely, alkaline remedies are apt to disorder the general health, modifying, as they do, so materially, the vital and physical properties of the blood, as well as the various fluids secreted from it.

"Now, these disadvantages may be obviated by employing the solvent remedies, used in the form of *injection;* these should not only be strong and frequently repeated, but they should be retained in the bladder as long as possible, or should be injected in a continuous stream.

"I am, of course, aware that injections have been tried occasionally in the treatment of stone, with more or less success; but they are not resorted to nearly so frequently as they ought to be, nor have they been employed in the manner most conducive to success.

"I would not be understood as recommending the use of vesical injections to the exclusion of constitutional treatment; this, of course, should be persevered in as well.

"Again, in some cases, medical may be combined with surgical treatment; that is, the stone having been reduced to fragments by the lithotrite, the solution of the fragments should be attempted by the employment of suitable remedies, both through the medium of the constitution and locally by injection.

"The conditions of the urine tending to the production of stone which call for treatment are those in which that fluid contains persistent deposits of uric acid, urates, oxalate of lime, cystine, and the earthy phosphates. The calculi ordinarily met with are composed entirely or in part of one or other of these compounds; those composed of uric oxide, silicic acid, and carbonate of lime, are of such rare occurrence that it is scarcely necessary to take them into consideration at all.

"The following figures show the relative frequency of the occurrence of the calculi most commonly met with:—

"Of 1000 calculi, the composition of which has been ascertained, 372 consisted of *uric acid*, alone, or mixed with small quantities of the urates and oxalate or phosphate of lime; 253 of the *earthy phosphates*, chiefly fusible calculi; 233 of varying layers of *uric acid*, *oxalate of lime*, and *earthy phosphates;* 142 of *oxalate of lime.*

"The urinary deposits and calculi most readily acted upon by solvent remedies are the several earthy phosphates and cystine; and, therefore, it is in these cases especially that the greatest amount of success is to be anticipated from the treatment here recommended.

"I have now a few remarks to make on the subject of the *diagnosis* of calculi.

"In general, but few attempts are made by the surgeon to determine, either during the existence of a calculus or prior to an operation, the chemical composition of the calculus, and yet the microscope affords a ready and satisfactory means by which this object may generally be accomplished. Thus the composition of the stone may frequently be determined, with considerable accuracy, by ascertaining, by means of the microscope, the ordinary deposit or deposits occurring in several consecutive samples of the same urine. The determination of the composition of the calculus is not, indeed, often a matter of much importance to the surgeon, who is about to remove the stone by operation; but to the physician, proposing to treat the case medically, it is a point of the utmost moment, because it is only upon this knowledge that the proper and exact line of treatment to be pursued can be based. There is yet another way in which the composition of calculi may be determined, namely, by a chemical examination of the fragments usually passed after the operation of crushing by the lithotrite."

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30. *Fracture through the Trochanters of the Thigh-Bone.* By JAMES SYME, Esq., Prof. of Surg.—George T., æt. 23, recommended by Dr. Anderson, of Selkirk, was admitted into the hospital under my care, on the 15th of January last, suffering from an injury which had been caused two days before, by a sack of flour falling with great force upon his left hip. I found him lying in bed, with the injured limb shortened, the trochanter major higher up, and more prominent than natural, and the knee turned over the sound one; in short, presenting all the characters of dislocation upwards and backwards. But, as a moderate degree of extension restored the proper aspect, and did so only while it continued in operation, I concluded that the injury was a fracture through the

trochanters, in that peculiar direction which the late Mr. Guthrie had the merit of showing might cause eversion of the limb, and of which I placed on record soon after the publication of his paper, another case confirming by the evidence of dissection the correctness of this explanation.

Previously to Mr. Guthrie's observation, there was much diversity of professional opinion on this subject, and the most eminent surgical authorities were completely at variance with regard to it. Thus, while Paré and Petit had recorded particular examples of the fractured limb being inverted, Louis and Sabatier denied that such a condition ever occurred. Boyer declared that he had neither met with it, nor could imagine the possibility of its occurrence; and Desault, on the other hand, calculated its frequency as being in the proportion of one to four of the cases in which the toes are everted. The causes of eversion being the weight of the limb tending in that direction, as may be seen in a dead body, aided by action of the muscles, especially the flexors of the knee, the iliacus internus and psoas magnus, and the rotators passing from the pelvis to the trochanter major, while the principal or almost sole counteracting force lies in the anterior portion of the two smaller glutæi muscles inserted into the forepart of the trochanter major, turning outwards of the limb should certainly be expected as the consequence of this fracture. But it was found by Mr. Guthrie, in examining the body of a patient, who had presented the unusual condition of inversion, that the fracture had detached the posterior part of the trochanter major, together with the trochanter minor, and left the anterior part of the former process connected with the shaft. Precisely the same state of things existed in the case that fell under my own observation, as may be seen from the illustration appended to its history.[1]

It is worthy of notice, as Desault remarked, that the muscles which effect rotation outwards must be relaxed by the displacement consequent upon a fracture, as it will approximate their origins and insertions; and, there can be no doubt, that, in such cases, the eversion is counteracted by a very slight degree of force, more suggestive of passive than active resistance, or, in other words, of yielding to gravity rather than resulting from muscular contraction. Thus the effect of detaching the muscles of external rotation in causing inversion, would not be so much by preventing eversion, as by allowing the former condition to be produced through the agency of the smaller glutæi, so that the state of inversion would be the only one truly dependent upon muscular contraction. In cases of inversion, I have accordingly noticed that the resistance to adjustment of the broken bone was greater than in the usual state of eversion. Independently of other considerations, the diagnosis of this particular injury is of importance in regard to the prognosis, since whatever difference of opinion may still exist as to the reparation of fractures through the neck of the thigh-bone, there can be no question as to their ready reunion when seated in the trochanters, and in cases of eversion it is impossible to discriminate with certainty, by external examination between these two conditions, but when the toes are turned inwards there cannot be any doubt as to the fracture admitting of complete recovery. While, therefore, prudence will always require that fractures of the upper extremity of the thigh bone should be treated as curable, the surgeon must be cautious in promising a favourable result, unless inversion of the limb satisfies him that the case is certainly within reach of remedy.

In regard to the means of treatment there does not appear to be any room for choice, since the one unquestionably most comfortable to the patient, and most conducive to the end in view, is the "Long Splint of Desault." It was accordingly employed in the case which led to these remarks, and with such success that the patient left the hospital on the 13th of March without there being almost any appreciable difference between the limbs by external examination. Sir Astley Cooper objected to this means of treating fracture of the upper extremity of the thigh-bone, that the pressure caused by its extending force would be apt to cause mortification in the feet of old people, who are most liable to suffer this injury. But I have long been satisfied, and by example as well as precept, endeavoured to inculcate, that the long splint is not required to maintain extension, and that the good effects produced by it depend entirely upon the prevention of motion in the limb. For this purpose it must be long enough to extend from the patient's false ribs to a little beyond the sole of his foot, and broad enough to equal the height of the knee, as it lies in the straight position, so that, if the patient is an adult, it should be about four feet and a half long, by four inches and a half in breadth. Unless the breadth of the splint be thus proportioned to that of the limb, it cannot prevent rotation; and unless long enough to reach the lower part of the chest, it must be equally incompetent to prevent motion of the hip-joint. Yet, in the Surgery of Desault, by Bichat, it is represented as extending no higher than to the trochanter major, and not more than three inches in breadth. It is, therefore, not surprising that the splints of this kind, employed in practice, are so frequently defective in their essential requisites, being almost always too narrow, and either too long or too short. One sent to me lately from New York is six feet long, and three inches and a half in breadth, with a longitudinal slit for fixing at different distances a screw, having a hook at its extremity, for the more effectual maintenance of extension. But from what has been said, it will, I trust, appear that any such extension must be useless in fracture, through the neck or trochanters; and even when the shaft is concerned, an extending power cannot be required; since if the broken surfaces are properly adjusted, it is unnecessary; while, if they are not so, it is altogether inadequate to replace them. So soon as possible after the injury, the fracture should be carefully set, through due extension and manipulation, guided by regard to the form of the sound limb, and then, if in the shaft, be supported by two lateral splints of pasteboard, or split wood, long enough to extend from the pubis and trochanter major to the knee, and which may be secured by four or five looped bandages. The long splint, if properly applied, will then prevent rotation and insure perfect immobility. There should not be any bandages employed that cannot be undone without deranging the limb; and, therefore, instead of several long rollers, such as are frequently used, a sheet or table-cloth is preferable—the splint being wrapped in it, until merely enough is left for folding over the thigh and leg. Under this mode of treatment, for which all the requisites are so simple that they may always be procured extemporaneously, recovery is completed with great comfort to the patient, and no less credit to the surgeon, there being, in general, hardly, if any, perceptible difference in the limbs, instead of shortening to the extent of two inches or more, which happens so frequently, as to have been considered by some authorities as almost unavoidable.

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[1] Edinburgh Medical and Surgical Journal, 1826.

In conclusion, I beg to express my persuasion—

1. That the great requisites for treating fractures successfully, are coaptation and immobility.

2. That extension, or a struggle between the two opposing forces of muscular contraction and a mechanical power, is not consistent with either of these conditions.

3. That, therefore, extension should be abandoned in the treatment of fractures.—*Edinburgh Med. Journ.*, Oct , 1857.

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31. *Ovarian Dropsy cured by Simple Puncture.* By Prof. Oppolzer.—The subject of this interesting and unusual case was 42 years of age, and had menstruated regularly. Four years prior to her coming under observation she remarked a swelling over the pubes, accompanied with pain in the region of the left ilium. A year afterwards she became pregnant, and the delivery was natural. The abdomen, before this event, was remarkably large, and remained after parturition also much increased in size. Menstruation was re-established, and continued regular. The abdomen gradually attained the size which it presented on the woman being received into Oppolzer's Clinique. Pressure on the lower and left portion of the abdomen caused pain. Defecation was difficult, and the calls to pass water were frequent and distressing. There was no trace of albumen in the urine. The ankles were slightly œdematous.

The size of the tumour and the distressing symptoms rendered her unable to work. The operation of tapping was accordingly determined, with a view of affording relief. Thirty-two pounds of a tolerably clear, greenish-coloured, opalescent fluid were drawn off, and on examination was found to be of alkaline reaction, and of sp. gr. 1035. It abounded in alkaline and chlorides; there was no colouring matter of blood nor phosphates.

After the operation, the dislocated organs, the liver and heart, returned to their normal position. The abdomen continued somewhat enlarged, and percussion indicated that some fluid still remained in the cyst. The uterus, which had been high up and immovable, was now easily reached and moved. The pains after two days disapppeared, and she was discharged, with an injunction to return after some time to show herself.

Her condition after one year and twenty days is thus described: Her appearance is blooming; the abdomen not in the least increased in size; the most carefully conducted percussion fails to discover any abnormal dulness; palpation detects no fluctuation; no remains of the cyst exist; the uterus is normal; menstruation natural, and the pains of which she complained have not returned.

No doubt could be entertained that in this case radical cure was attained by the simple operation of tapping.—*Dublin Hosp. Gaz.*, Aug. 15, 1858, from *Wockenblatt der Zeitschrift der k. k. Gesellschaft der Aertze zu Wien.*

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32. *Carcinomatous Growth removed by a Pen and Escharotics.*—Prof. Simpson showed to the Medico-Chirurgical Society of Edinburgh (May 5, 1858) a carcinomatous growth which he had removed by applying to it, with a common pointed goose-quill, a thickish paste, made of commercial sulphuric acid and sulphate of zinc. The paste was taken up like a drop of ink in the pen, and laid in a line along the skin covering the tumour. The caustic immediately whitened and decomposed the external surface of the skin, and the decomposed tissue was scraped through with the point of the pen. By a succession of similar applications and scrapings, the skin and a portion of the underlying cellular tissue was cut through in a very few minutes; and two days afterwards the mass of the exposed tumour was divided and destroyed by the pen and caustic in the same way. If the tumour had been larger, a number of lines of escharotics could be sunk down in this same manner into the basis of the mass. The patient, who had had a tumour removed in England last year from the same spot by the knife, averred the pain of the caustic and pen was by no means great; but the sensitiveness of different patients was very different. After the dead tumour and dead surrounding tissue began to separate, the edges of the wound took on a rapid cicatrizing action, and pushed the decomposed mass out in a mushroom-like form. By the time it fell out, there was only a comparatively small circular sore left.—*Edinburgh Medical Journal*, July, 1858.

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33. *Treatment of Ulcers by Caustic Lint.*—M. Riboli has conceived the idea of dissolving nitrate of silver in a small quantity of water, soaking pledgets of lint in the solution, and drying them. This caustic lint, applied to ill-conditioned ulcers, produces a more permanent effect than the remedy in a liquid state; and as the author proposes different degrees of concentration for the solution, the activity of the treatment may be varied according to the nature of the case, and more or less advanced stage of the affection.—*Bull. Gén. de Thérap.*, April 30, 1858.

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34. *Metallic Sutures and Metallic Ligatures.*—Prof. Simpson showed to the Edinburgh Medico-Chirurgical Society (May 5, 1858) a large fibroid tumour, extracted last month from the mamma. It was, he believed, the first instance in which metallic ligatures were ever used in the human subject to tie the vessels laid open in a surgical operation. In this case Professor Simpson used a thread of platinum for this purpose. The lips of the wound were united also by a suture of platinum wire. Dr. Sims, of New York, had lately earnestly pleaded the advantages of silver wire as a thread for surgical sutures, and as forming a material less irritating than silk, hemp, etc. But, if a metallic suture were of value in this respect, Professor Simpson argued that metallic ligatures to the cut vessels (a subject not alluded to by Dr. Sims) ought to be of still

greater moment in relation to the healing of wounds by the first intention. The silver wire employed by Dr. Sims (No. 29) was too rigid to make a small knot, such as was required for the ligatures of vessels. Professor S. had used platinum, as more tenacious and pliant than silver. Perhaps copper alone, or covered with silver or gold, would be found as good, and much cheaper; and possibly slender threads of wire would, on experience, turn out the best, as well as the cheapest, for both sutures and ligatures.—*Edinburgh Medical Journal*, July, 1858.

35. *Size of Male and of Female Larynx.*—Dr. Struthers states (*Ed. Med.-Chirurg. Soc. Proceedings*), that he has been in the habit of showing his pupils that a shilling, and sovereign, are arrested in the male larynx, and a sixpenny piece, and half-sovereign, in the female larynx, at the same spot. They readily pass into the upper larynx, and, by falling straight in the middle line, might pass partly through the rima glottidis; but are firmly arrested just below this, so that the upper edge projects up through the rima, and is within the touch and reach of forceps. The male trachea is large enough to allow a shilling to move up and down in it, though not freely, but the amount of direct finger force necessary to push the coin through the lower larynx, is such that the passage could not occur in the living body. A shilling measures eleven lines, a sovereign nearly a line less. A sixpenny and half sovereign measure nine lines.—*Edinburgh Medical Journal*, July, 1858.

OPHTHALMOLOGY.

36. *On the Influence of the Cervical Portions of the Sympathetic Nerve and Spinal Cord upon the Eye and its Appendages.*—Dr. John W. Ogle read a paper on this subject before the Royal Med. and Chirurg. Soc., June 22.

The main object of this paper was the application to clinical medicine of the various experiments which have from time to time been performed, as showing the influence possessed by the sympathetic in the neck and the upper part of the spinal cord upon the iris and upper eyelid. Experiments and dissection as regards the lower animals have shown that the curtain of the iris, containing as it does two sets of muscular fibres, a circular set by which the pupil is contracted, and a radiating set by which it is enlarged, is under the domination of two separate and distinct sources of innovation. The third cranial nerve is found to control the circular or contracting fibres, and the sympathetic, by virtue of communication with the lenticular ganglion, is found to control the dilator or radiating fibres. Hence if the influence of the third pair be destroyed, the pupil becomes dilated, inasmuch as the dilator fibres, those presided over by the sympathetic, are unopposed; again, if the influence of the third cranial pair be left unimpaired, and that of the sympathetic be destroyed by section or extreme pressure, then the pupil becomes contracted. The author dwelt upon the history of the various experiments upon which the above statements are made, and also upon those from which it is concluded that in certain parts of the spinal cord resides the power or influence which acts upon the dilator fibres of the iris passing to that structure through the sympathetic viâ the roots of certain cervical and dorsal nerves. From these latter it is apparent that the same paralysis of the dilator fibres of the iris which follows section of the sympathetic in the neck follows also the severance of such fibres as connect the sympathetic with the spinal cord, as also the section or destruction of the spinal cord itself in certain parts. Accordingly it might naturally be expected that any cause of extreme pressure acting upon the various portions of the nervous system before alluded to would, as in the various experiments before adduced, cause a contracted state of the pupil on the side corresponding to that on which the extreme pressure existed. And thus it was that Dr. Gairdner, of Edinburgh, first sought to explain those cases in which, along with an intra-thoracic aneurism, a contracted state of the pupil coincided. These cases of his were detailed, several of them not having been hitherto recorded, and to these others were added of his own observation, as well as some from other sources. Cases were next given in which pressure from aneurism upon the sympathetic in the neck had produced contraction of the pupil. In the third place, instances were adduced in which extreme pressure from other causes than aneurisms had produced a like effect upon the pupil, as in the case of enlarged glands, carcinomatous deposit, etc. In the fourth place, bearing in view the intimate connection between the sympathetic main branches in the neck and the cervical part of the spinal cord, he drew attention to several cases in which a contracted pupil had been observed in injuries of the spinal cord itself. But in addition to a contraction of the pupil as brought about by section of the sympathetic, spinal cord, etc., as before spoken of, experimenters have also found that irritation or galvanism of the same parts of the nervous system will bring about a dilatation of the pupil, and that this dilatation may be effected even when section or extreme pressure has already given origin to contraction of the pupil. Accordingly, in these physiological facts an explanation was sought of certain cases in which pressure from aneurism, diseased products, etc., appeared to produce, not a contraction, but a dilatation of the pupil in man; and he instanced, in the 5th place, several cases in which the pressure from various sources was inestimably so much in extreme as to be, in fact, a source of irritation or stimulus, acting in the same way as it was found in animals, that any stimulus, mechanical, chemical, or galvanic, would act upon the sympathetic. In no other way could he explain the dilated state of the pupil which existed. But besides the above-described effect upon the pupil of the eyes, in enumerating the various experiments in which the sympathetic, etc., was divided, special attention was drawn to a dropping of the upper eyelid, or ptosis, which on several occasions was observed. This phenomenon was explained on the supposition that along with the sympathetic fibres to the iris, those to the third cranial pair are also paralyzed, and hence the levator of the upper eyelid, which is supplied from the third pair, is deprived of power to a greater or less degree. One or two cases were also adduced in which ptosis of the upper eyelid was observed in connection with pressure about the neck, from aneurism of other sources. He offered the same explanation of the convergent strabismus which, in the hands of certain experimenters, was, along with other results, found to depend upon a division of the sympathetic cord in the neck. He supposes it to have existed by reason of paralysis of such fibres (in several animals, five or six in number) as pass up to join the sixth cranial pair of nerves, by which the power of this muscle becomes weakened, and its action counterbalanced by the internal adductor muscle.—*Med. Times and Gaz.*, July 24, 1858.

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37. *Sympathetic Inflammation of the Eyeball.*—It has been shown, by abundant evidence, that when one eye is injured, and its fellow becomes weak and inflamed by sympathy with the former, the latter can be rescued from destruction in no other way than by removing the original source of irritation, by cutting off the forepart of the injured eye, and evacuating the humours, or by the entire removal of the eyeball.

Dr. P. H. Watson relates (*Edinburgh Med. Journ.*, July, 1858) the following case, illustrative of this maxim:—

"W. F., a stout, healthy young man, from Montrose, was struck accidentally, with a stick, upon his right eye, about six years ago. The organ was severely injured at the time, and has been a continued source of suffering and discomfort ever since. The following was its condition when he applied for advice at the Eye Infirmary: The pupil was widely dilated, and occupied by a milky capsular cataract; the iris, although bright and healthy in colour, had lost its tension, and oscillated with every movement of the globe. There was slight vascularity of the white part, but the cornea was perfectly healthy and transparent. Vision was nearly gone, and great irritability and tendency to lachrymation were exhibited upon every attempt to expose and examine the eye. For several months back, the left, or sound eye, had sympathized more or less with its fellow, and latterly, besides being weak and irritable also, had become affected with a progressive dimness or imperfection of sight. In consequence of these alarming symptoms, he had wisely abandoned, for a season, his occupation as a plumber, which, indeed, he was little able to follow, and now applied for medical aid.

It seemed very probable, considering the obstinate and prolonged nature of the case, that complete removal of the injured eye would be the only effectual remedy for the amaurosis which was threatening the other; but, as the cornea and iris were both healthy, we determined, in the first place, to try the effect of extracting the crystalline lens, and so giving the organ an opportunity of subsiding into a quiet condition, on the complete evacuation of the aqueous humour. A section of the cornea was made in the usual manner, and the opaque capsule being opened, the lens came away *clear as glass and perfect.* Contrary to expectation, however, the hyaloid membrane remained entire, no vitreous humour escaped, and the flap of the cornea being laid down, the wound speedily healed, with a resecretion of the aqueous humour. No material benefit followed the operation; the pupil was now clear, but vision underwent little improvement, and, which was more vexatious, the eye continued weak and irritable as before.

There could be no doubt, now, as to the propriety of removing the entire globe. It was accordingly done, under chloroform, by dividing the muscles successively, in the manner recommended by Dr. Ferrall; and the result was most satisfactory. The left eye being no longer exposed, through its sympathy with the other, to an abiding source of irritation, speedily recovered its original strength and perfection of sight, and our patient was able to resume, with comfort, his former avocations. He wears an artificial eye, which is sufficiently supported by the textures still remaining in the orbit, and follows, better than could be anticipated, the movements of the other eye.

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38. *Amaurosis.*—Dr. R. Hamilton and Mr. B. Bell, in their quarterly report (*Edinburgh Medical Journal*, Aug., 1857) of cases occurring in the Edinburgh Eye Infirmary, relate the following case of amaurosis, and offer some very instructive practical remarks:—

"A female servant, about thirty, of fair, clear complexion, and in the enjoyment of good health, although never very robust, accompanied her mistress to a picturesque village on the northern shore of the Firth of Forth, during the autumn of 1856. She felt the glare of light upon the sea rather trying to her eyes, but experienced no great inconvenience, until one bright sunset, when a sudden dimness of vision came on in the right eye, attended by slight redness and tendency to water, without pain. This state of the eye had lasted for a week, when she was seized, during the night, or rather towards morning, with a very intense pain in the right temple. It was not of very long duration, but almost unbearable. The dimness of sight continued; and in October, two months after its accession, she began to observe, in front of the eye and throughout the field of vision, showers, as she described them, of dark motes, which were unabated on the 28th of January, 1857, the time of her applying at the Eye Infirmary for advice. Her amount of vision with the affected eye was then extremely small, as she could hardly distinguish the large capital letters on our admission card. The pupil was black, regular, and tolerably active; the only objective symptom being a slight vascularity of the sclerotica bordering upon the cornea. A few leeches having been applied to the lower eyelid, and attention paid to the state of the *primæ viæ*, she was directed to take, night and morning, a pill containing one grain of *pil. hydrargyri*, and three of extract of *gentian*. This was on the 31st of January. In ten days the gums were tender, and simultaneously a very marked improvement took place in her condition—the *muscæ*, which had been present for more than three months, disappearing entirely, and vision becoming so perfect that she could read the smallest print with as much ease as before her illness. The pills were gradually discontinued, and the recovery seemed to be complete.

"In these days, when doubts are sometimes cast upon long-established methods of cure, and when, as we believe, the comparative rareness of the more intense inflammatory diseases, with which our fathers had to grapple, has given a temporary plausibility to the new doctrines, the abettors of the old antiphlogistic system are still masters of one fortress, so to speak, within which they may look forth upon their antagonists with calmness and complacency. The strong position to which we refer is the common treatment of inflammations of the eye, a class of diseases in which we can often literally *see* the effect of remedies, and trace the relationship of cause and effect with the same precision as in other subjects of physical investigation. It is hardly necessary to mention those cases in which inflammation of the iris holds a conspicuous place. Can there be a reasonable doubt in the mind of any one who has been accustomed to treat such forms of disease in the ordinary way, that the inflammatory process admits of being broken, as to its violence, by local bloodletting, and then of being conclusively arrested by the internal use of mercury? Can we doubt that, were remedies withheld and the disease suffered to run its course, although pain and redness might disappear, the organ would be seriously damaged, not merely from adhesion of the iris to the capsule of the lens, but from thickening and opacity of other delicate textures still more essential to perfect vision? Without being advocates for much depletion, believing that a very moderate loss of blood, at the right time and in the right place, will commonly answer every useful purpose, we are very skeptical as to the successful treatment of many forms of deep-seated ophthalmia independently of bleeding or mercury. Many years ago, in the wards of St. Bartholomew's Hospital, we saw our distinguished friend, Mr. Lawrence, attempt repeatedly to cure iritis without having recourse to mercury, and yet find it necessary, out of regard to the welfare of his patients, to have recourse to it in the end. Mr. Lawrence took this mode of impressing the minds of his pupils with its great value, and they had many opportunities of learning, from personal observation, that mere depletion will not arrest the hurtful inflammatory action which lingers in the eye after the first violence has been subdued. The supporters, therefore, of the antiphlogistic treatment of inflammation have reason to feel peculiarly strong and unassailable when the contest is maintained upon *ophthalmic ground*, an arena which their opponents seem generally to dislike. At least, they have no partiality for illustrating their doctrine by inflamed textures visible to the naked eye; but have hitherto shown a decided preference for textures within the chest, whose morbid changes are appreciated mainly by the ear.

"An obvious objection to this course of procedure occurs in the mere statement of it; and we venture to suggest another. A *pneumonia* of moderate extent, allowed to run its course, may leave the patient, to all intents and purposes, as good a man as it found him, even although a certain portion of his pulmonary tissue is no longer in its normal condition. The remaining sound lung, on either side, may henceforward perform the whole work of respiration so thoroughly that both the patient and his physician shall have good reason to regard the cure as virtually complete. But it is very different with the eye. An inflammation of the *iris*, *choroid*, or *retina*, if left to itself and allowed to run its course, is much more serious, ultimately, to vision, than the supposed pneumonia to respiration. The damage inflicted upon these delicate textures causes inevitably an impairment of sight, for which there is no *vicarious* provision. One portion of the *crystalline capsule* or *retina* preserving its transparency, is no substitute for other portions which have been rendered opaque by exuded lymph; and, therefore, he who would treat such diseases successfully, feels the necessity for precise, prompt, and effectual remedies. Experience has told him what these remedies are, and, at the risk of being condemned by the new school of physic, he feels bound to use them. Modern speculation would fain convince him that the Cullens and Gregories of former days were mistaken when they fondly supposed that they could subdue a pneumonia or a pleurisy *vi et armis;* but, although he now seldom or never meets with such stalwart inflammation as they encountered daily, he still holds, more or less, by the same weapons in his own peculiar province. The weapons may have been wielded sometimes with undue and dangerous energy, but they often did good service, and may do it again, when the same circumstances in the cycle of disease come round.

"For these two reasons, therefore, the visibility of many inflammations of the eye. and the accuracy with which a complete cure can be known, it is surely desirable that those who, as a general rule, condemn the abstraction of blood and the use of mercury in the treatment of inflammation, should leave the pulmonary textures, and draw illustration of their doctrine from the organ of vision."

39. *Secale Cornutum in Asthenopia.*—Prof. Von Willebrand states (*Archiv. für Ophthalmologie*) that he has employed "secale cornutum in several diseases of the eye, in which I believed the evil to be removable by recalling a brisk contractility in the walls of the bloodvessels, or in other structures furnished with unstriped muscular fibres. This remedy has proven of the greatest advantage in disorders of the adjusting power of the eye. . . .

"A woman, aged 28, of a fine, healthy appearance, who had always enjoyed good health, and who had gone through two favourable confinements, the last of them four years before, complained of great deterioration of sight, so that she could not occupy herself for longer than some five minutes at a time in sewing or reading, when the letters seemed to mix together, and pain arose in the eyes, spreading to the brow and temples. Were they, on the contrary, wholly unemployed, she felt no pain in the eyes, and found her power of vision pretty much as it had always been. The patient thought she had remarked this irritability of the eyes to have come gradually on for two years, contemporaneously with diminished menstruation. No morbid change could be detected about the eyes. The pupils were somewhat contracted, but quite movable. The patient could distinguish near and distant objects as formerly. Her visual distance was normal. The eyeballs felt something firmer than common. There was no doubt that the disease consisted in a disturbance of the adjusting power; it appeared to me certain also that a chronic congestive state of the eyes was present, and that this was probably the cause of the disturbance in the adjusting power of the eye. The case presented nothing further worthy of note, except that the bowels were slow.

"I ordered ten grains of secale cornutum with carbonate of magnesia, four times a day. I saw the patient again in four days; she was overjoyed at the improvement which had taken place. She could now read and sew with ease. This state lasted four months, after which the patient observed that the disease returned. The same means was again employed, and with equal benefit. Since then she has seldom required to have recourse to it, so long as she follows the advice given her, to use her eyes sparingly in reading and sewing.

"More recently, I have in cases of disturbance of the adjusting power, always used the same means, and with constant good effect. The complaint returns, indeed, readily in those cases, where the cause (for example, straining of the sight upon minute objects, especially in a bad light) cannot be avoided, yet it is removed by the same means. The young people of the ladies' school of this place, who, in consequence of strained occupation in a bent position, and of ill-arranged illumination, are exposed to the above-mentioned unfavourable circumstances for sight, have afforded me several examples of considerable derangement of the adjusting power, which all, at least for a time, have yielded to this means. I am thereby firmly convinced, that in disturbed power of adjustment the treatment by means of convex glasses is greatly aided by internal medicine. The dose of the secale cornutum is to be varied according to the age of the patient. Lately, I have ordered only five grains for a dose to an adult, mostly in combination with carbonate of magnesia, sometimes in chlorotic cases with iron."—*Med. Times and Gaz.*, August 28, 1858.

40. *Malposition of the Lachrymal Canaliculi.*—About eight years ago, attention was drawn to the everted punctum by Mr. Bowman, who recommended slitting up the canaliculus as a potent means of amelioration.

Mr. Haynes Walton has recently (*Med. Times and Gaz.*, Aug. 14th, 1858) proposed a plan of treatment which, in some cases, will afford a better result.

"The common cause of eversion of the lower punctum, unattended with general ectropium," observes Mr. W., "is chronic inflammation at the corner of the eye, involving more or less the tarsal edge, so that this is thickened, and the movements of the canaliculus impaired or destroyed. There is, in reality, a little ectropium, a partial turning out of a very important part of the lid. I recommend nothing more than to treat this diminutive ectropium, as I have for years treated the more general and extensive, sometimes the complete eversion of the lid, by the removal of a part of the palpebral conjunctiva. A miniature operation is needed. With a very small scalpel and a fine cross-tooth pair of forceps, I dissect off a bit of the conjunctiva (not so rapid or easy a process as might be supposed), just posterior to the canaliculus, and from over the entire thickness of the cartilage. The lateral limits, I regulate by the degree of the inversion. I do nothing more, and leave the wound to cicatrize, with the advancement of which, the punctum is turned in, and, according to the lesser pathological change that it has undergone, the more perfectly will it be righted. I have often been surprised at the degree of perfection thus obtained.

"No persons have such opportunities of inquiring into the value of any class of remedies, or any plan of treatment, as one's colleagues. A man may deceive himself, but he cannot deceive them. It is, then, to my brother officers, at the special institution to which I am attached, that I refer, if reference be needed, for the confirmation of these facts.

"But the edge of the lid may be too much thickened, and otherwise altered, as in very chronic cases, when the exposure of the mucous membrane is a secondary source of irritation, and the operation will not do all that is needed. Then the canaliculus should be slit up, and the channel maintained by passing the probe daily, till the surfaces have no longer a tendency to unite. In elderly persons, and in the aged, the punctum may be displaced, falling outwards, solely because of paralysis of the orbicularis palpebrarum, there not being, as in the other instance, any structural change in the parts. Here, I have not failed to give complete relief by attending to the ectropium alone."

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41. *Six Cases of Cataract in the same Family.*—Mr. J. F. Streatfeild states (*Ophthalmic Hospital Reports*, No. iii.) that he has lately seen a family of which five children and their mother had double cataracts. "It did not appear that any of the paternal or maternal relatives had been similarly affected. The grandmother, who was present, first observed the deficiency of vision, and the defect in the eyes of her child, the mother, when she was a year and a half old, and in the second generation, at various ages, *later in life according to the seniority of the five children;* thus, the eldest for six years, and the youngest for a year and a half, are said to have had good vision. There was not in either of the cases any history of short-sightedness before the defect was evinced, and, after this time, *in a month to six weeks*, in either of the cases, the child became so blind as only to distinguish light objects. The six patients have all gray irides, and hair of a very light brown, in the younger children almost colourless. The mother has two sisters and a brother who have brown irides and good vision. All her children much resemble their mother in appearance, and all of the family, including the father (who is a labourer) are of a healthy, sanguine disposition, and have no other defects perceptible. In neither of the patients are there any corneal opacities, or unsteady movements of the eyes."

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42. *Chloride of Zinc and Glycerine in Ophthalmia of New born Children.*—Dr. A. Macmillan recommends a solution of five grains of chloride of zinc in half an ounce of glycerine (the two to be well triturated in a glass mortar) as an application in the ophthalmia of new-born children. He applies a few drops three times a day.—*Med. Times and Gaz.*, July 3, 1858.

MIDWIFERY.

43. *Menstruation in Austria.* By Dr. Ferd. Szukits.—Of 665 women born in Vienna, and menstruating there for the first time, the mean age for its first appearance was fifteen years and eight and a half months; in 210 cases, in the beginning of the fifteenth year; in 87, in the eighteenth year; in 84, in the sixteenth; 6 women menstruated first at the age of eleven years, 3 at twenty-two. The period during which menstruation may primarily occur in Vienna comprises twelve years. In Paris, in the same latitude, it occurs one year earlier.

Of 1610 women from the country, the age of first menstruation averaged about sixteen years and two and a half months. 418 menstruated during the 15th year, 251 in the sixteenth; then followed in order the seventeenth, eighteenth, and nineteenth. More than half, 888, menstruated after the fifteenth year; less than one-fifth—304, before it. Two menstruated at ten, and the oldest—two likewise—first menstruated at twenty-five. The period during which menstruation may primarily occur, comprises therefore sixteen years in the country—four more than in the town of Vienna. Of these 1610 women. *a.* 603 were from Upper and Lower Austria Proper; of them, the mean age of first menstruation was sixteen years and three months; here also the greatest number, 142, menstruated in the fifteenth year, 88 in the seventeenth, 81 in the sixteenth, and 72 in the eighteenth year; the youngest, 5, were eleven, and the oldest, 2, twenty-five years old; the period of primary menstruation comprising thus fifteen years, or three more than in Vienna. *b.* 430 were Bohemians, of whom the mean age of primary menstruation was sixteen years and two months; 148 menstruated first at fifteen, 51 at seventeen, 49 at sixteen, and 46 at eighteen; the youngest was ten, and the oldest twenty-four, at her first menstruation; the period of primary menstruation comprising fifteen years. *c.* 273 came from Moravia, the mean age of primary menstruation being sixteen years and three and three-quarter months; 69 menstruated first at sixteen, 59 at fifteen, and 32 at seventeen; the youngest, 8 in number, were twelve, and the oldest, 8, twenty-two years old; the period of primary menstruation comprising thus only eleven years; one year less than in Vienna, and four less than in Bohemia and the rural districts of Austria Proper. *d.* 180 women came from Hungary; and of them the average age of primary menstruation was fifteen years; 39 menstruated first at fifteen, 19 at fourteen, 16 at thirteen, 12 at seventeen; the youngest was ten, the oldest twenty-two; the period of primary menstruation comprising twelve years. *e.* 67 women came from Silesia; the mean age of their primary menstruation was sixteen years and one and a half months; 21 menstruated first at sixteen, 14 at fifteen, 8 at seventeen, 87 at eighteen; the youngest was twelve, the oldest twenty-two years old; the period of primary menstruation comprising eleven years. *f.* 66 women came from Bavaria; their average age for primary menstruation was sixteen years and ten months; 17 menstruated first at seventeen, 15 at sixteen, 9 at eighteen, and 8 at fifteen; the youngest was eleven, the oldest twenty-three; the period of primary menstruation comprised thirteen years.

Brierre de Boismont fixed in Paris the age of primary menstruation at fourteen years and ten months for the poor, fourteen and five months for the middling classes, and thirteen years and eight months for the rich; and with this the observations of Chomel, Andral, and Recamier agree. Of our author's 2275 cases, 136 were of the middling classes—in them the average age of primary menstruation was fifteen years and two months; 730 handworkers—medium age fifteen years and ten months at their first menstruation; 1207 female servants, of whom the mean age of primary menstruation was sixteen years and two months; and 202 day labourers, whose mean age at their first menstruation was sixteen years and one and a half month; these results agreeing with Boismont's observation, that menstruation is earliest among the rich, and latest among the poor. Among the 2275 women, the ages at which menstruation first occurred are thus divided:—

At 10 years	2 women menstruated.		At 18 years	259 women menstruated.	
" 11 "	15	"	" 19 "	147	"
" 12 "	36	"	" 20 "	95	"
" 13 "	149	"	" 21 "	34	"
" 14 "	204	"	" 22 "	30	"
" 15 "	628	"	" 23 "	4	"
" 16 "	335	"	" 24 "	2	"
" 17 "	283	"	" 25 "	2	"

The average age of primary menstruation in Austria being thus fifteen years and seven and a half months. As influential agents in hastening or retarding menstruation, Sz. enumerates geographical position, climate, populousness of a town, nationality, mode of life, occupation, food, clothing, dwelling, training, morals, and bodily organization; according to some authors, hereditary tendency is also influential. Although in Austria menstruation most commonly occurs between the fifteenth and seventeenth years, many cases have been recorded of its much earlier occurrence. Wilson observed a case in which it occurred in the fifth year; the breasts being as large as those of a marriageable female. Scanzoni records one case at eight years: D'Outrepont, one at nine months; she had protuberant breasts, and menstruated every four weeks till her death in her twelfth year. Boismont records two cases—in one menstruation commenced in the third month, in the other in third year. Similar observations are recorded by Mad. Boivin, Dieffenbach, and Martin Wall. In France, early menstruation is more common than in Austria; as Boismont, in 1200 cases, found fourteen who had menstruated before their tenth year. According to Szukits' observation, in scarce one-third was primary menstruation painful; while in France, according to Boismont, this was the case in more than two-thirds. In one case of dysmenorrhœa our author observed trifling acne rosacea on the chin and sides of the nose—the woman was twenty-seven years old. In three cases, each menstrual period was attended by an eruption of urticaria over the entire body; and in two girls, one fifteen, the other seventeen, the molimina of primary menstruation were attended by inflammation of the cellular membrane, which again disappeared on its cessation in three to five days after. Strong, healthy women generally menstruate more sparingly than feeble, anæmic, or tuberculotic females; the latter, if not labouring under amenorrhœa, have profuse watery menstruation, lasting from ten to fourteen days. Of 1013 women, 240 menstruated sparingly, 560 moderately, and 187 profusely; of the latter, 26 passed clots without there being any uterine lesion present. Of 1013 women, Sz. found that only 642 menstruated regularly every twenty-eight to thirty days, 371 menstruated irregularly, 169 menstruated from every eight days to every three weeks, 128 only every five or six weeks. The duration of menstruation is influenced by the same causes which influence its early appearance—its medium duration is $3\frac{4}{5}$ days. Three times, Sz. saw menstruation occur for a shorter or longer period during pregnancy; also during lactation it was frequently seen. Trustworthy cases are recorded in which menstruation only occurred during pregnancy or after delivery. During fourteen years, and in 8000 cases, 14 occurred of total absence of menstruation; four of these had borne children repeatedly, the others never; most of them had from time to time, every three or four weeks, molimina menstruationis; in none was there any vicarious menstruation; in two cases, imperfect development of the uterus was discovered. Of 263 women, menstruation ceased in 99, between forty-six and fifty years; in 77, between forty-one and forty-five; in 42, between fifty-one and fifty-five; in 26, between thirty-six and forty; in 15, between thirty and thirty-five; and in 6 cases, between fifty-six and sixty years. The youngest woman who had ceased to menstruate was thirty-two, the oldest sixty-one, at the period of cessation. This may occur suddenly, without interruption to the general health, or it may take several years for its completion. Boismont reckons the average of this at two years. Sz. found the mean duration of uterine power to be thirty years. 125 women menstruated from twenty-one to thirty years; 106, from thirty-one to forty years. The shortest period of menstruation was twelve years, and happened in two cases; the longest, forty-five years, likewise occurred twice. Boismont found one case with a duration of only five years, and another with a duration of forty-eight. Of 863 women, 64 were never pregnant; 124 conceived once; 73, five times; 63, six times; 74, seven times; 38, eight times; 32, nine times; 27, ten times; 11, eleven times; 15, twelve times; 13, thirteen times; 5, fourteen times; 2, fifteen times; 7, sixteen times; 2, seventeen times; 3, eighteen times; 1, twenty times; 2, twenty-two times; 4, twenty-four times—863 women, of whom 61 aborted; each woman averaging about five conceptions. The most usual period of conception in Europe is between the fourteenth and fiftieth year; but cases of child-birth in the sixtieth year are recorded by Meissner, Bernstein, Osiander, Mende, and Busch. Haller saw one case of childbirth at sixty-three, and another at seventy; as also Labatt in Dublin, and Capuron, in Paris.—*Ed. Med. Journ.*, Aug., 1858, from *Zeitschrift d. Wien. Aerzte*, 1857.

44. *How Many Children can a Woman Bear?*—Dr. Szukits says that this question has not yet been satisfactorily answered. He himself has observed two females, each of whom had borne twenty-four children. Osiander (*Handb. d. Entbindungs Kunst*, 1 Theil, 1 Abth. S. 319) mentions one woman who during her married life bore 44 children, and another who had 53. Burdach (*die Physiol. als Erfahrungswissenschaft*, 1 Bd. 1826, S. 410) relates that the wife of a countryman in the Moscow district had given birth to 69 children at 27 confinements—four times four at one birth, seven times three, sixteen times twins. In the year 1809, the Vienna newspapers contained the following announcement: Maria Anna Helm, the wife of a poor linen weaver in Neulerchenfeld, 20 years married, bore at 11 confinements 32 children; 28 living, and 4 dead; 26 were males, and 6 females; all were begotten by one man, and nursed by herself. She had at her last confinement three children—one living and two dead. Her husband was a twin, she herself one of four. Her mother had produced 38 children, and died during a confinement with twins (Osiander, 516). Six children seem to be the largest number ever produced at one birth. A perfectly trustworthy instance of this is the following: The *Schwäb. Mercur*, No. 8, S. 22, 1806, contains the following notice: Ohlau in Silesia, 11 Dec., 1805.—The wife of a chimney-sweep here, named "Döpfer," was yesterday confined of six children; all were boys, and dead. This woman, who has been twice married, has already given birth to 44 children. During her first marriage, which lasted twenty-two years, she bore 27 boys and 3 girls. In her second marriage, which has lasted but three years, she has born 14 children—3 at the first, 5 at the second, and now 6 at third confinement (Osiander, 320). —*Ed. Med. Journ.*, June, 1858, from *Zeitschrift, d. K. K. Gesellschaft d. Aerzte zu wien*, July and August, 1857.

45. *Beneficial Effects of Pepsine in the Obstinate Vomiting of Pregnancy.* By L. Gros, M. D.—In the great majority of cases the vomiting of pregnancy may safely be left to the influence of time; but there are some cases in which females are scarcely able to retain in their digestive system a sufficient amount of nourishment to support their existence, and are therefore reduced to the last degree of emaciation. In some, also, the shocks occasioned by this obstinate and repeated vomiting become the source of abortions, which might have been prevented by moderating the activity of the morbid phenomenon. A very remarkable case was related in 1856, by M. Teissier, Professor of Clinical Medicine at Lyons, showing the immediately beneficial effect of a dose of pepsine in a case of vomiting during pregnancy. In this case the symptoms resisted all the ordinary methods which were employed, and the patient was unable to retain in her stomach any substance whatever. Under these circumstances, the patient was brought to M. Teissier, who found her in the following condition: The vomiting had continued for two months, and she was at the end of the fourth month of her pregnancy; she presented the appearance of a skeleton, having the aspect and the cough of a phthisical subject; the pulse was 140, and M. Teissier thought at first that the case was one of pulmonary tubercle. Finding that all treatment had been hitherto inefficacious, and that the

lady was actually dying of inanition, he was seriously meditating upon the propriety of inducing abortion as a means of saving her life: but as a last resource before operating, he determined to employ pepsine. He accordingly prescribed one gramme, to be divided into two doses, and taken every day in a spoonful of broth. At the very first dose the broth was retained, and from that moment the vomiting never returned. On the third day the lady ate some chicken, and then some beef-steak. The treatment was continued in the same manner for three weeks, and at the end of that time the cure was complete: the emaciation was replaced by *embonpoint*, the fever and the cough ceased with the vomiting, and at the end of the ninth month the lady was safely delivered.

Dr. Gros then relates six other cases in which the pepsine was employed with the same success, and he thinks himself warranted in concluding that pepsine undoubtedly produces good effects in the vomiting which attends pregnancy. He explains the results by supposing that, although in the first instance the vomiting is due only to the sympathy existing between the uterus and the stomach, yet subsequently the stomach itself becomes affected, as is proved by the fact that in the beginning of pregnancy the vomiting occurs only in the morning or the evening; but in aggravated cases it supervenes after every meal, and all alimentary matters are rejected. In such cases, therefore, when the stomach has taken on a morbid habit, and exhibits an alteration of secretion, the pepsine appears to be really indicated; although in a merely sympathetic action between the uterus and stomach it would be difficult to explain the efficacy of its action.—*Brit. and For. Med.-Chirurg. Review*, July, 1858, from *Bull. Gén. de Thérapeut.*, Feb. 15th, 1858.

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46. *On the Condition of the Cervix Uteri during the latter half of Pregnancy.* By M. Caseaux.—Drs. Costilhes, Boys de Loury, and Bennett, maintain that during the early months of pregnancy ulcerations of the cervix uteri are of great frequency, and exert a powerful influence in the induction of various pathological conditions. M. Caseaux believes these statements to be greatly exaggerated; and at all events in the latter half of pregnancy, to which his own observations apply, they are not borne out. Examined by the speculum, the mucous membrane of the vulva, the vagina, and the free surface of the os itself, is found of a dark colour, which becomes deeper and deeper, until towards the end of pregnancy it has attained a dark violet. A person unaccustomed to this examination, and especially if he has not previously ascertained the position of the cervix by means of the finger, may have considerable difficulty in engaging this part within the extremity of the instrument—this arising from the anteversion of the body throwing the vaginal extremity backwards.

"As the *toucher* would lead one to expect, the modifications presented to the eye by the vaginal portion of the cervix, are very different in primiparous and in multiparous women. In both, the cervix is of a deep violaceous, wine-lees colour; but in the primipara, this is pretty uniform throughout its whole extent. The external orifice, the lips of which are much softened, is in general more or less rounded; but although it is larger than in the unimpregnated state, it admits of the penetration of the eye with difficulty, even when the valves of the speculum are considerably expanded. The circumference of the os, and the free portion of the cervix, rarely exhibit any traces of ulceration; but it is common enough to observe series of cherry-red granulations, true fleshy vegetations, varying in size from a pin's head to a large pea, which bleed on the slightest contact. In the woman who has borne a certain number of children, the cervix is in general much more voluminous, so that there is some difficulty in completely embracing it by the speculum. The lips of the os seem divided into several fragments, this segmentation, the result of lacerations that have occurred during former deliveries, rendering it very irregular. In consequence of these numerous solutions of continuity, the orifice is much larger and much more easily dilatable, so that the eye is enabled with ease to explore all the cavity of the cervix. The walls of this cavity are very unequal, and present irregular series of fungous projections, separated by more or less deep depressions. Some of these prominences are transparent, being probably due to hypertrophied follicles, but others resemble true flabby (*mollasses*) vegetations. Sometimes these are covered by a protective epithelium, but it is not unusual for them to be deprived of this, and then to bleed upon the slightest touch. It is especially within the furrows which separate them, that more or less deep linear ulcerations are often observed. These ulcerations sometimes so increase in size as to occupy a pretty considerable surface, and then they are easily seen; but generally they are hidden in the depths of the anfractuosities, and in order to perceive them, after well cleansing the surface, we must put the cervix on the stretch by opening the instrument widely. I have very often met with these ulcers in multiparous women, and I believe that I am within the truth when I say that I have observed them in seven-eighths of the cases, confining this statement to the last third of pregnancy. Supposing that a singular chance has not favoured my researches for a long time past, it is probable that what I describe here is the normal condition, and should not be considered as a pathological state, but simply as a consequence of the progress of gestation. Resembling in this respect the deep colour, the tumefaction, the ramollissement, and the almost fungous condition of the walls of the cervix, which are proper to pregnancy, and in nowise influence its progress, these ulcerations have the same origin, and should be considered as the result of excessive congestion. I believe that they are of no more importance. I am especially convinced of their innocence, and believe that all treatment of them is much more mischievous than useful. . . . . If I am not mistaken, then, and if the peculiarities I have been describing belong to pregnancy, and are only an exaggeration of the modifications of the structure and the vascularity of the parietes of the uterus, this condition should disappear with the cause that gave rise to it. Like vomiting, varices, hæmorrhoids, and all the sympathetic disturbances of pregnancy, it should cease with this. And that is precisely what takes place, and we may lay down as a rule, that no traces remain five or six weeks after delivery; the ulcerations which we sometimes meet with in women recently delivered, do not, in fact, present the same appearances, and generally are referable to another origin." (Pp. 453–456.)

The statements made by Boys de Loury, Bennett, and others, as to the frequency with which abortion and various puerperal diseases are produced by ulcerations occurring at an early period of pregnancy, are so discordant with the observations the author himself has made, that he cannot but tax them with exaggeration. It is of importance to distinguish between ulcerations that have preceded pregnancy, and have persisted and increased since its occurrence, from those which have only become developed subsequently to the formation of the germ. The former, becoming irritated under the influence of exertion, and especially by excessive coition, may easily induce the contractility of the body of the uterus, and bring about premature expulsion. But the latter, in the author's opinion, rarely exercise a similar influence; so that however proper treatment may be in the one case, it does not seem called for in the other. He also doubts the justice of Bennett's statement, that these ulcers are a frequent cause of obstinate vomiting in pregnancy; and since he has been in the habit of treating this affection by the application of belladonna to the cervix, he has had the opportunity of examining four primiparæ, reduced by it to the last stage of marasmus, in whom the cervix remained perfectly healthy.

M. Laborie, in his report upon this paper, observes that M. Coffin, drawing his materials from the practice of M. Richet, describes precisely the same fungous ulcerations as those treated of by M. Caseaux; but that he attaches much more importance to their presence, at the same time that he admits that no kind of treatment has been applied with success. Of seven women examined by M. Laborie himself in M. Cullerier's wards at the Lourcine, there was but one who did not exhibit ulcerations. She was a primipara, and had reached the fifth month. Two other primiparæ, exhibiting the ulcers markedly, were three months gone; and the four multiparæ had respectively attained the periods of five, seven and a half, and nine months. In these cases no special means of treatment were adopted, nor is it probable that the ulcerations would ever have been discovered without the use of the speculum.—*Brit. and For. Med.-Chir. Review*, July, 1858, from *Mémoires de la Société de Chirurgie de Paris*, tom. iv.

47. *Shortening the Duration of Labour.*—Dr. J. Gray recommends (*Glasgow Med. Journ.*, Jan., 1858), in order to increase the action of the uterus during labour, and thereby expedite delivery, to excite the nipple as labour pain comes on, and continue the stimulation so long as it lasts. This is accomplished by passing the left hand gently but continuously upwards and downwards over one or other of the nipples; or by simulating with the fingers the act of sucking of the infant. By such manipulation, he says, the nipple erects, and, in virtue of *reflex action*, the uterine contractions increase in force; while at the same time the os dilates, and the external parts become relaxed. Besides shortening the duration of labour, he finds it has also the effect of preventing hemorrhage. The second stage of labour completed, if the placenta be not in the passage, he still maintains at short intervals the friction over the nipple, in order that the uterus may expel its contents; and also resorts to it in such cases as he has occasion to fear "flooding."

"Reasoning," Dr. G. remarks, "from the practice of ancient and modern times, and influenced especially by the theory of reflex action, as recently discovered and propounded by Marshall Hall, I have lately been led to adopt this mode of irritating the nipple, in order to increase the action of the uterus, with a view to the abridgment of labour. If, I inquired, the application of the child to the breast causes the womb forcibly to contract, and thus prevents 'flooding,' may not a similar operation, artificially performed, have the same effect in promoting the contractile efforts of the uterus, and hastening the delivery? That it does so, very ample trial has fully convinced me. In difficult cases, indeed, which require instrumental aid for their termination, it will most probably prove useless—failure depending upon malformation either on the part of mother or child. But where the child is in the normal position and of average size, and should no deformity exist in the pelvis or soft parts of the mother, I have found it generally successful. I never, however, be it remembered, interfere in those cases where there is already *active* uterine contraction."

48. *Uva Ursi as an Obstetrical Agent.* By Dr. De Beauvais.—The uva ursi certainly possesses the power of causing contraction of the fibres of the bladder as well as of those of the uterus, and Dr. De Beauvais has seen a case in which a single dose produced a most painful vesical tenesmus; and he saw another case of the same kind in a man labouring under piles, complicated with blennorrhœa and varices of the neck of the bladder. A case also occurred of paralysis of the bladder, following hysteria, in which the use of uva ursi succeeded in restoring the contractility of the bladder. From this excito-motor property possessed by the uva ursi, it has been thought that it might be used effectually in certain cases of atony of the uterus, in which the ergot of rye is commonly employed. Its properties are not so dangerous as those of strychnia or of ergot of rye, and moreover it is not disagreeable in taste; in fact, it smells and tastes something like tea. The mode of administration, in simple labours which are retarded by weakness of the pains, atony of the uterus, and nervous exhaustion, consists in giving every hour a gramme of the leaves of uva ursi, infused in a teacupful of boiling water. It may be allowed to cool, and may be sweetened. But if it be desirable to produce a rapid effect, a decoction should be preferred, and the administration should take place at short intervals. Dr. De Beauvais thinks that uva ursi may be placed, on the one hand, in the rank of the astringent tonics, by reason of the gallic acid and tannin which it contains; but that, on the other hand, it deserves to be placed by the side of the ergot of rye, as a proper excitant of the muscular system of organic life.—*Ibid.*, *Bull. Gén. de Thérap.*, Jan. 30th, 1858.

49. *Laudanum in Painful Affections of the Uterus.*—M. Aran describes a means of locally applying laudanum, that he has found useful in several hun-

dred affections of the uterus. The object being to retain this substance in contact with the os uteri and upper part of the vagina, a magma is produced by means of an inert powder. The cervix being exposed by means of the speculum, from thirty to fifty (and sometimes more) drops of laudanum are allowed to flow to the bottom of the instrument. After bringing the fluid in contact with the surface by alternately opening and closing the valves of the speculum, a few drachms of starch are placed at the bottom of the instrument by means of a spoon or spatula, so that the laudanum may become absorbed by this, and, this taking place very speedily, the speculum is then withdrawn. While this is doing, the starch is kept in the vagina by charpie or cotton, which, indeed, may be left at the entrance of the vulva, if the size of this leads to the fear that the substance will fall out when the patient stands erect. Absorption takes place slowly, one hour, and sometimes three or four hours, being required before the first assuaging effect is perceived. No ill effects, whether from excess of narcosis or disturbance of digestion, have been observed. The application may be repeated every other day, or even every day, the patient in the interval well washing out the previously applied magma.

This dressing is applicable to those affections of the uterus and genital organs which, after active inflammation is subdued, still manifest a painful hyperæsthesia. But it is especially useful in the hyperæsthesia which sometimes accompanies uterine deviations, or the morbid adhesions contracted by the uterus with the other pelvic organs. In these cases of chronic cellulitis, as also in chronic inflammation of the ovary and the tube, it does good service by allaying morbid sensibility. In such cases a precise indication may be often sought for in vain, nothing indicating inflammation or congestion, or these having been subdued by local bleeding. A few laudanum dressings quickly bring relief, and that not for some days only but for entire months. "I have found another morbid occurrence remarkably modified by these dressings, viz., a special condition of the entire uterus, frequently met with in women of a certain age, and which, perhaps, is in some cases connected with the formation of small fibrous tumours. In these patients the finger and the speculum fail to detect any sign of inflammation or congestion; and yet so excessive is the morbid sensibility, that a false step or violent shock excites sensibility on every side. In other words, it is a most complete state of hysteralgia; a few laudanum dressings soon allay this sensibility and pain, the patient exchanging in a few days a state of extreme suffering and uneasiness for one of remarkable comfort." M. Aran has made but little use of this means in ulcerated cancer, fearing hemorrhage from the employment of the speculum; but in non-ulcerated cancer and epithelioma and in fibrous tumours, this means has afforded more marked relief than any other he has tried. It does not cure these patients, but to afford them relief is to do much.—*Med. Times and Gaz.*, April 3, 1858, from *Bull. de Thérap.*, t. 53.

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50. *Anæsthetic Powers of Carbonic Acid in Diseases of the Female Bladder.*—At a meeting of the Surgical Society of Ireland on February 27, Dr. Robert Johns made some observations on the application of carbonic acid gas as a means of procuring anæsthesia in diseases of the female bladder. He observed that Dr. Simpson, of Edinburgh, had lately brought the properties of the gas before the profession; but that Mojon used this gas long prior to him, and report now states that some one else recommended it previous to the latter named gentleman. Dr. Johns has known it to give much relief in organic and functional diseases of the uterus and neighbouring organs. Having seen much benefit result from injecting this gas into the vagina in vesical maladies, it struck him that relief ought to be more quickly obtained, and more permanently established, by bringing it more directly in contact with the diseased structures. He accordingly carried out his theory by conveying it into the organ itself, and thereby realized his most sanguine expectations. Two or three cases are given as types.

Case I.—Mrs. B., a middle-aged female, of strumous habit, came under treatment for chronic inflammation of the bladder, the effects of cold. The urine contained pus, blood, and mucus. She complained chiefly of a frequent desire to micturate, being obliged to rise at night so often as twenty times. The blood was removed by ergot of rye, but with this exception, the ordinary treatment seemed not to have the slightest effect on the disease. Dr. Johns then had recourse to carbonic acid gas applied internally to the bladder; and after thus operating on eight occasions at intervals of a day and two days, she was quite relieved, and I believe has continued so ever since. During its administration, she experienced a hot and burning sensation, through the pelvis, a feeling of distension in the bladder, together with a desire to pass water, all of which gradually subsided, leaving her much soothed by the application. A sense of debility and lassitude set in, and lasted for some days, but then disappeared. From the first operation, the desire to micturate became less in frequency, and finally ceased altogether.

Case II.—Mrs. D., aged about 70, of a highly nervous temperament, came from a distance in the country to consult him, being strongly impressed with the idea that she was suffering from cancer. She had consulted many, both at home and elsewhere, but without any benefit, and Dr. Johns failed to give her the most trifling relief so long as he depended entirely upon medicine given by the mouth. She had all the symptoms of an ulcer at the neck of the bladder, and suffered much from pain and tenderness in that locality, as also from a constant desire to pass water, particularly at night, having been disturbed so often that she could not count the number of times. After seven applications of carbonic acid gas into the bladder, at intervals of two and three days, these unpleasant symptoms left her. During the operation, she appeared to suffer greatly from over-distension of the organ, and of a burning feel through the pelvis. She was confined to bed for some days from debility and lassitude, which she attributed to the treatment, which was for that time suspended, but she most willingly submitted to it again, as she said she began to feel better from the first application. The last time he saw her, she was walking stoutly, and expressed herself as well as ever.

Case III. was one of a female past the middle age. When Dr. Johns first saw her, she had all the symptoms of stone in the bladder, and on proceeding to examine her, he found a portion of a stone, of about the size of a lupin seed, impacted in the urethra. at its orifice, where it evidently had been for days. He at once extracted it; and in about two or three days after, sloughing set in at that part, but gave way to treatment by chlorate of lime lotion. In ten days from this period, a fungus sprung up in this locality, which he removed by a scissors, and subsequently cauterized the part from which it grew with solid nitrate of silver. From the commencement she suffered extremely from pain in the bladder near its neck, and in the track of the urethra, which locality was much thickened, was very painful to the touch when examined per vaginam, and gave the idea of some deposit, perhaps cancerous, in its inferior wall. Incontinence of urine was a very troublesome symptom with this patient, and this secretion was heavily laden with pus, blood, mucus, and sand. She had medicines ordinarily given under such circumstances, but without any effect, when recourse was had to carbonic acid gas, as in the former cases, which completely removed the pain and the incontinence; but the latter has since returned, yet in a minor degree. On one occasion, she passed from the bladder a mucous cast, as it were, of the entire viscus. The smell from the urine was almost intolerable, and the metallic catheter which Dr. Johns used was so stained that with much difficulty it was cleaned. The blood had entirely disappeared, the quantity of pus, etc., was now vastly diminished, the fetid smell was all but removed, and the catheter was very triflingly acted upon. The tenderness along the urethra became very much less, as did also the thickening, and the catheter when passed into the bladder could be felt very plainly through the vagina, which at first was not possible from the size of the tumour which existed in that locality. Dr. Hayden, Professor in the Catholic University, examined some of the urine under the microscope, and gave the following opinion: "It contains a multitude of large cells of various shapes, but principally circular, each containing from one to three nuclei; some of these cells are elongated at the opposite ends, so as to present a bi-polar appearance. There are besides several crystals of the triple phosphate of ammonia and magnesia, a group of needle-shaped crystals of lithic acid, blood corpuscles and escaped cell-nuclei, and epithelial scales. Without pronouncing positively on the nature of those cells, I rather incline to the opinion that they are of malignant origin." The gas when sent into the vagina relieved the painful tenderness in the urethra, particularly when combined with chloroform, and she said the sensation produced was agreeable. She complained of weakness for a day or so; but then she said she was better in every way, and asked for the gas to be used with her. In this case, as in Case I., Dr. Johns injected the bladder each day with warm water prior to using the gas.

Latterly, previous to using this gas, Dr. Johns washed out the bladder well with warm water by means of a large India-rubber bag, with a stopcock and a double female catheter, with a plug made to fit each tube at pleasure. It is like the ordinary double male catheter, only being shorter and less curved.

When first experimenting on this gas he used a common bottle, which he very soon discovered to have many disadvantages, such as loss of time, loss of gas, and thereby inefficient action, etc. He now uses a round bottle, the body being eight inches and a half in circumference by three inches high, furnished with two necks—one in the usual place, and the other set obliquely beside it; the latter is closed by a ground-glass stopper, which is kept in its place by wire, that it may not be forced out by the gas. Through a cork placed in the central neck passes a metal tube with a stopcock, to the extremity of which is attached a vulcanized India-rubber tube for conveying the gas to its destination. When it is advisable to pass it into the vagina, the free end of this tube is slipped over a bone tube, furnished with a gallery, such as is generally attached to India-rubber bags for injecting that passage; but when the bladder is the viscus to receive the gas, a catheter takes the place of the tube, and in such cases he prefers the double instrument already described, as when our patient complains of the feeling of over-distension, which absolutely takes place, as appreciable by the hand externally applied, we can at once relieve her by removing the plug from the tube, through which the gas is not passing, as we thereby allow its free escape from the organ. When using the single or ordinary female catheter, he could not do so without withdrawing the instrument, and consequently stopping the operation. This great inconvenience led him to seek for some appliance capable of producing the desired effect. Suspended in the bottle is a piece of sponge, which serves to fulfil the twofold purpose of rendering the gas less stimulating by freeing it in its transit through of any particles of the salts it may be carrying along with it, and of acting as a medium by which the vapour of chloroform may be combined with the gas and conveyed along with it.

In some cases the pain produced by this gas is almost intolerable, whether sent through the vagina or into the bladder; it is of a burning character, and becomes diffused throughout the entire pelvis, sometimes causing great desire to micturate, but this gradually subsides and soothes. Almost invariably relief, be it never so trifling, is obtained after the first operation. Dr. Bernard has seen the local administration of this agent produce the symptoms of asphyxia from charcoal, such as headache, giddiness, buzzing in the ears, dimness of sight, constant drowsiness, sickness of the stomach, general lassitude, with very great debility for some days, hemorrhage, and incontinence of urine; but that in the cases in which those occurred, the patient was suffering from engorgement of the cervix uteri, and the gas was employed twice or thrice daily; still, that always those unpleasant symptoms set in after the first application. Dr. Johns has never met with any of those disagreeable accompaniments, except lassitude with debility, but he has seen hemorrhage and incontinence of urine checked by its use.

Dr. Johns, in opposition to some high authority, strongly reprobates its use in the induction of premature labour, as we may thus inject it into the veins, and thereby cause sudden death, which occurred in a case not very long since in Dublin, in which it or air was employed.

From the advantages he has seen derived from this remedy in irritable and other diseases of the female bladder, Dr. Johns recommends its trial in like affections in the male.

The following conclusions are, he thinks, fairly deducible from what experience he has had of carbonic acid gas:—

1. It is eminently useful as an anæsthetic and curative means in certain diseased states of the female bladder, when injected into that organ.

2. It gives much relief in the painful sympathetic and organic affections of the uterus and neighbouring organs when applied per vaginam.

3. It is likely to prove beneficial in diseases of the bladder in the male when similarly employed, and is deserving of trial in such cases.

4. Hemorrhage and incontinence of urine are by no means barriers to its employment.

5. Being a dangerous means of inducing premature labour, its use is contraindicated for such a purpose.

6. It is useful as a means for conveying the vapour of chloroform to painful parts.

7. When debility and lassitude are caused by its employment, its use ought to be suspended till those symptoms disappear.

8. In general one day ought to be permitted to elapse between each application of the gas.

9. It acts as a disinfectant, and removes the bad smell from the urine.

10. It acts better on the bladder when that viscus has been previously well washed out with warm water.—*Dublin Med. Press,* March 10, 1858.

51. *Iodide of Potassium for Dispersion of the Milk.*—M. Roussel, the Professor of Clinical Midwifery at Bordeaux, having observed the effect of iodide of potassium in diminishing the milk when given in the non-puerperal condition, resolved to administer it in cases in which the dispersion of this secretion was desirable. A woman, who suffered from bad chapped nipples, had great and very painful engorgement of the breasts, attended with much fever. The iodide was given, and by the next day the pain and fever had disappeared, its employment for three days rendering the cure of a tumefaction that threatened abscess complete. M. Roussel has since then tried it in twenty cases, and always with success. After the cure, the milk returns again two or three days after the suspension of the iodide. Its action is more decided in the dose of from six to eight grains per diem than when given in larger quantities. The excessive secretion of milk may be prevented or moderated by administering it on the first or second day after delivery.—*Gazette des Hôpit.*, No. 75.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

52. *Death from Swallowing Oil of Turpentine.* By John Maund, M.D.—The following case seems worthy of recording, from my being unable to find any published account of death occurring from swallowing oil of turpentine. Christison, when speaking of this subject, says: "I am not aware that it has ever proved fatal." Taylor states: "I believe there is no case on record of destruction of life by turpentine." Other authors seem to agree in the same opinion; and neither Beck nor Guy, in their works on Medical Jurisprudence, treat of turpentine as a poison. From such testimony it evidently is manifest, that death occurring from its administration must be very rare. Pereira and Christison both mention, on the authority of Professor Schubarth, "that two drachms of this oil, administered to a dog, produced immediate staggering, cries, tetanus, failure of the pulse and breathing, and death in three minutes."

Being anxious to ascertain if such effects were by any means constant, the following experiments were made:—

1st. To a moderate-sized dog half an ounce of oil of turpentine was given; this produced, immediately, quickness of breathing, increased flow of saliva, frequent but ineffectual attempts to vomit, giddiness, and appearance of intoxication. The whole of these symptoms passed off in twenty minutes, and the dog appeared little worse for the dose.

2d. To another dog was administered two ounces of oil of turpentine. Similar symptoms to those before described immediately occurred; in addition, there was shaking of the limbs, and a greater amount of general prostration. Half an hour afterwards drowsiness became a prominent symptom, and the giddiness seemed to have increased, so that the dog could with difficulty stand. The eyes were much congested and everted, so that scarcely any portions of the cornea could be seen. The countenance presented the appearance of suffering and depression. The dog lay down on its side; frothy sputa kept running from the mouth, and the animal seemed to be dying; still consciousness was never totally lost, for its attention could, though with difficulty, be attracted by speaking loudly, or by touching it. The following morning the dog seemed much better, and it gradually recovered from the effects of the turpentine.

3d. To a third dog three ounces of oil of turpentine was administered. For the following quarter of an hour the only effects manifest were quickness of breathing and increased flow of saliva; giddiness and general intoxicating effects then supervened; in half an hour the dog lay down on its side, with its legs stretched out, and, excepting that the eyes were not everted, presented much the appearance of the second; and on the following day it gradually recovered.

4th. To another dog four ounces of turpentine were then given. This, in two or three minutes, produced great excitement; respirations were 108 per minute; clear saliva kept streaming from both sides of the mouth; but no giddiness or sleepiness, as in the other cases, occurred. Half an hour after the turpentine was administered, the dog broke his cord, and ran about as if greatly excited; but he would come when called, and appeared perfectly tractable and docile.

From these experiments it would appear, that the effects of oil of turpentine on dogs, described by Schubarth, like the following case of poisoning in the human subject, must be the exception, rather than the rule.

The following account of a case of suicidal poisoning by oil of turpentine I abridge from the depositions taken at the coroner's inquest, and from information that I obtained at the time of making the *post-mortem* examination.

E. H., a female of thirty years of age, and healthy appearance, had for some months been living with a man as housekeeper and mistress, but, from his signifying his intention of leaving her, she became low spirited, and for a few weeks before her death indulged freely in the use of stimulating drinks.

On the day of her death, a neighbour with whom she was intimate called to see her; she then appeared well, though a little excited, but by no means intoxicated. While conversing with the deceased, she noticed a soda-water bottle, which she took up, as she thought it contained gin; at that time the bottle was nearly full, and contained turpentine. At the request of the deceased, she went to fetch her some meat from the butcher's; on returning shortly afterwards, not finding her in the kitchen, or answering when called to, she put down the meat and left the house. Four hours after this witness had left her, she was found dead, the meat and other things about the room being in the same order as the witness saw them when she returned with the meat.

The position of the body, which had not been moved when I saw it, about forty hours after death, at once suggested to my mind that death had occurred from strychnine, the results arising from which I am quite familiar with, having made four *post-mortem* examinations, within the last three years, when death had taken place from this poison. The deceased evidently, immediately before death, was sitting on the side of the bed, and when found, seemed to have simply fallen backwards across the bed. The legs were rigid, and stretched out before the body, and the soles of the feet were concave; the arms were bent across the chest, and great force was required to straighten or remove them from this position, the biceps muscles being forcibly contracted, and very hard. The body assumed the state of opisthotonos, and all portions of it were rigid, but thighs least so. The eyes were open and prominent, and the pupils slightly dilated; the jaws were fixed, and could not be opened; the skin generally, was pale, but of a livid hue in places, particularly about the head. The general appearance of the body was such as to give the idea that death had occurred suddenly from tonic spasm. There was no derangement of the dress or bedclothes to indicate convulsive action, and no external marks of violence. An empty pail was found on the floor, close to the deceased, which probably she had placed there in case sickness should occur.

The internal organs of the body presented the usual appearance of a person dying from asphyxia. The membranes of the brain and upper portion of the spinal cord were found greatly distended with very dark-coloured blood, of a sizy consistence, but it had no unusual smell. The brain was not softer than natural, but was, to a less extent than its membranes, congested with blood of the same character. The mucous membrane of the trachea was rendered quite arborescent by the ramification of a network of distended vessels, but in the interstices the membrane was of the usual colour. The lungs were gorged with blood of the same dark appearance as was found in the membranes of the brain. The cavities on the right side of the heart were distended with blood: the left also contained a small quantity of blood; in both sides it was of equally dark colour. The liver and kidneys were congested, but to a less extent than the organs before mentioned. The bladder was empty, and firmly contracted, but appeared healthy. The stomach and bowels were the last part examined. Immediately on the stomach being opened, a most powerful smell of turpentine became evident, which had not before been recognized; this organ contained a small quantity of thick fluid, which had the appearance of an emulsion made with turpentine and mucilage. The duodenum and upper portion of the jejunum were considerably congested, and the smell of turpentine was evident in all portions of the intestinal canal.

A further examination of the stomach and its contents showed that the mucous membrane was congested, and several very large vessels, injected with dark blood, were found passing from the cardiac to near the pyloric extremity: and in several places close to these vessels small ecchymosed patches existed. The contents of the stomach amounted to three ounces; it was of a semi-fluid character, and globules of what appeared to be oil of turpentine were seen to be intermixed with the more tenacious contents. Distilled water was then added to it, and thoroughly mixed together; three hours afterwards there was found swimming on the surface a limpid fluid, which was removed with a pipette, and was found to consist of oil of turpentine, of which there was six drachms. The remaining contents of the stomach were then examined for strychnine, but none was discovered in this, the parietes of the stomach, or mixed with the turpentine which had been removed. Under the microscope the solid contents were seen to consist chiefly of wheat and potato-starch corpuscles.

The house was carefully searched as soon as the deceased was discovered, to ascertain if poison of any kind could be found, or if any vessel was soiled by any unusual fluid; neither, however, could be discovered. The bottle containing turpentine was found on the shelf, where the witness said she saw it, before leaving to fetch the meat for the deceased. The quantity removed from the bottle was about six ounces; whether the whole of this was swallowed, it was impossible to ascertain, but it seems highly probable that the portion taken was drank directly from the bottle. No smell of turpentine in the house, or suspicion of its having been taken, existed till the stomach was opened.

The deceased, it seems, had several times hinted that she would destroy herself, but this threat did not appear to have excited any serious apprehension that she intended carrying it into effect.—*Dublin Hosp. Gaz.*, July 1, from *Australian Med. Journ.*

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53. *Rupture of the Spleen.*—Dr. George R. Playfair, in a communication read before the Med.-Chirurg. Society of Edinburgh (*Edinburgh Med. Journal*, April, 1857), states that during two and a half years' residence in India, twenty cases of ruptured spleen came under his notice. "A person," he remarks, "with an enlarged spleen holds on to life by a very slight thread, for a blow which would

not injure an infant may in him cause death. I have known it produced by a slap with the back of the hand, a push, a slight fall, and in one case the cause appeared to be a sudden violent contraction of the abdominal muscles. The result of a rupture is invariably death, for this lesion is as certainly fatal as cutting the carotid. In all the cases which came under my notice, the fatal termination occurred within a very short period after the infliction of the external injury. The shortest time I remember was between two and three, the longest about twenty minutes; the average, I should say, not more than seven or eight minutes; the time varies with the extent of rupture. The external appearance of the body after death is quite characteristic of the lesion—the whole surface blanched, the abdomen distended and tense, with distinct fluctuation. On opening the abdomen, you find the cavity filled with fluid, dark-coloured blood. After removing the blood, great care is required in handling the spleen, as, from its softness, you may easily produce a rupture in addition to, or in extension of, the injury which was the cause of the fatal hemorrhage.

"The rupture varies greatly both as to extent and position, and I have more than once been puzzled to account for the degree and locality of the lesion, with reference to the external violence which was said to have caused it. The largest was nearly three inches long on the convex surface; the smallest, a minute opening near the root of the organ. I have seen it as it were a notch on the lower edge, or a rupture of considerable size on the concave or inner surface."

54. *Poisoning by Conium Maculatum.*—Much diversity of opinion exists as to the symptoms which a poisonous dose of conium maculatum produces; to settle this question Dr. T. Skinner records (*Liverpool Medico-Chirurgical Journal*, July, 1858) five carefully observed cases of hemlock poisoning. The subjects were children from five to eight years of age.

Dr. S. draws the following conclusions as to the symptoms and physiological actions of a poisonous dose of conium maculatum:—

"Great dryness of the fauces, with a feeling of constriction of the pharynx; in a few instances slight headache, muscæ volitantes, diplopia, languor, and inclination to sleep, pupils dilated, face livid, pulse small and weak, heart's impulse very weak, respiration subdued, surface of body cold, general paralysis of all the voluntary, and ultimately of all the involuntary muscles; those of deglutition being the first, and respiration the last to fail. At the time of the general paralysis coming on there is more or less coma, collapse, or a condition between the two; there is foam from the mouth, and death is apparently the result of coma. Purging and vomiting have repeatedly followed its medicinal use; I believe this, however, to have been an accidental result. Convulsions, furious delirium, intoxication, epileptic fits, and similar symptoms, have not been observed by competent witnesses in this country, and I do not think that we are entitled to take the opinions of observers in other countries in regard to the poisonous properties of indigenous plants, since a plant may be poisonous in one country and inert in another.

"I think I am justified, then, so far as my own cases are concerned, in considering conium a purely narcotic poison, void of acridity, and not specially affecting the functions of the spinal cord. That its effects are exactly similar to those produced by morphia and its salts, excepting that it dilates the pupil, and the stertor is not so marked; and this view is corroborated by the *post-mortem* appearances found in fatal cases. It will be remembered in my first two cases, that the brain was the first organ affected, and the paralysis of the legs never appeared, as the children ran home, and then complained of sleepiness, and desired to be put to bed."

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Additional Remarks on Dynamoscopy. By J. M. F. Gaston, M. D., of Columbia, S. C.*

In illustration of the view, that the sounds which fall within the province of dynamoscopy result from the passage of the blood through the capillaries, I have examined three cases of paralysis of the arm of dissimilar origin and very difficult in their character. One was the result of an apoplectic seizure, in which hemiplegia ensued, leaving the circulation in an almost normal condition, while motion and sensibility were extinct in the left superior extremity. In this case there was no muscular contraction of any kind whatever, and yet the sound was very distinct at the end of the finger of that hand. This would lead to the inference that the circulation was the source of the sound, and as it is known that the vitality of a limb is not materially lessened by paralysis of this kind, it is plain that a nervous function must be extended to the circulation even when motion and sensation are lost, and this belongs to the original system of nerves which is more immediately related to the power of the organization respecting which this new inquiry is concerned.

The second case which has been under observation, is one of long standing paralysis connected with some rheumatic features in the subject. Partial hemiplegia of the left side, involving both the leg and arm, has been present for a number of years, and the left arm hangs useless at the side, though there is sensibility in the limb. In this case there does not seem to be any material deviation from the standard of healthy action in the circulation, and yet I suppose the long continuance of this inert condition, with contraction of the tendons of the fingers, would manifest less evidence of capillary action. My anticipation was to some extent realized, and yet the sound was entirely perceptible in the fingers of the affected limb, indicating that the flow of blood was sufficient to give this sign of vital action in the part. Had the sound depended on muscular action, we could not have expected it to be heard in such a case as this, when no evidence of the muscular contractility had been present for so long a period.

The third instance to which I wish to draw attention is one of so much interest within itself, that I will give a more detailed account of the circumstances of its origin and progress. It was a local paralysis of the left arm without any general impairment of the physical organization, in which all power and sensibility were extinct, and in which at the outset there was no evidence of pulsation in the arterial trunk or branches which supply the circulation to the limb.

On the 20th of April, 1857, I was called to this subject, who was a negro man of robust frame, engaged on the railroad near Columbia. He had been crushed by a bank of earth, which lay upon him, with his arm beneath his body, for a considerable time. He was excavated in an almost suffocated state, and brought to the city, when I discovered that no motion, sensibility, or pulsation was present in the limb; and indeed it was necessary during that night and next day to resort to artificial means to promote the flow of blood from the veins, and thus invite the supply by the arteries as there appeared to be a degree of stagnation in the circulation incompatible with the life of the part. The cause of this suspension of pulsation must be involved in some degree of obscurity, but the solution of it may throw some light on the important subject of the arterial action, in the causation of the pulse, and hence it is proper to investigate closely every point connected with it. To make the case understood it may be stated here that the absence of pulsation was a characteristic feature of the limb for several weeks. Why was no pulse to be detected while the blood evidently did find its way slowly through the arteries into the veins? Had the artery been compressed so as to agglutinate its sides, the blood could not have passed; or if a clot had formed in the trunk from the protracted pressure at the axilla, no flow of blood through the vessel would have followed. Or if we suppose that the channel of the vessel was reduced very much at the point of pressure, can it follow that the small column which is transmitted should not have the pulsation imparted to it? This view seems the most available for explanation of any, looking to the direct injury to the arterial trunk; and yet it is not favoured by analogy of suspension of pulsation under partial occlusion of the trunk of an artery, nor was the diminution of flow so great as to induce the conclusion that any considerable obstruction existed.

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* This addition to Dr. Gaston's paper in the present No. (see p. 360) was received too late to be inserted in its proper place.—Ed.

The explanation which appears to me most plausible and satisfactory, refers the difficulty to the local injury of the nervous supply of the limb, from the long continued impaction of the members under the weight of the mass of earth which covered the patient. The head of the humerus was turned forwards and inwards so as perhaps to be pressed out of the glenoid cavity of the scapula for the time, owing to the pressure, of which there was ample evidence, in the posterior aspect of the shoulder. The nerves were compressed between the head of the humerus and the clavicle or upper ribs to an extreme degree, and hence undoubtedly resulted the paralysis of motion and sensation. Is it not then unphilosophical to infer that the organic nerves which go to keep up the pulsation of the arterial circulation were affected in like manner, and that the absence of the pulse followed such an impairment of nerve power? I foresee the consequence of such a solution in the recognition of an actual action independent of that of the heart, and when facts lead to a correct induction there is no more reliable conclusion. In this point of view, the case under consideration is perhaps without a precedent, and the particular features of it are calculated to elucidate this subject of arterial pulsation, as no other physiological or pathological data are on record.

After one month of continued absence of pulse, the radial artery began to manifest some pulsation; and at the end of two months he was attacked with measles, in which excitement the arterial development of the affected arm seemed to participate, and the pulsation was more distinct than previously, and the eruption over the surface seemed to be as full as elsewhere. The sensation was somewhat restored along the inner portion of the arm as low as the elbow, but there was no sensibility to pinching or pricking or any other irritation along the forearm or hand, and there was no power of motion in any part of the limb at any time subsequent to the injury. The muscles were in a state of flaccidity, and the member had become diminished in size from want of use and deficient nutrition. Twelve months after the compression of the part the circulation was very deficient in pulsation, and it was thus examined for dynamoscopic indications, when I found very little of that peculiar sound at the end of the fingers which was distinct and full on the sound hand. Here, then, was a case in which the weak circulation with scarcely a well-defined pulsation, was characterized by a deficiency of that peculiar sound at the ends of the fingers which is found to be well marked in the healthy state of the organism, and I take it, as very strikingly corroborating my view, that these sounds are caused by the propulsion of the blood through the capillary vessels in the extremities of the part examined. This limb was subsequently amputated as useless.

If we undertake a long brief analysis of the three cases, it will be noted that all were equally deprived of the power of motion; and hence, if muscular contractility was a *sine qua non* of these sounds, they should not have been observed in any of the cases. Yet they were perceptible in each, but most defective in the instance of impaired circulation, and seem there to bear a direct relation to the tone of the circulation.

This renders the subject of dynamoscopy of considerable importance, as affording a clue to the vital forces of the organism. And my own conviction is, that a close investigation of the bearings of this organic indication will conduct the medical inquirer to the most satisfactory information as to the power and capacities of the different subjects who require medical treatment.

Muriatic Acid in Scarlet Fever; Caution in regard to the Use of Calomel. By Richard McSherry, M.D., of Baltimore, Md.—Some years ago, pending the preparation of the chlorine mixture as recommended by Dr. Watson, I gave to children affected with scarlet fever small doses, from one to three drops, of muriatic acid, largely diluted with water. I was more pleased with its effects than I ever had been with the chlorine mixture; and I have since continued to use it with the most gratifying success. The dilute acid is readily taken by children, and cleanses the throat effectually in its passage, thus superseding, to a great extent, the necessity for gargles, injections, &c. I give my little patients oranges to eat, and lemonade to drink, keep up faithfully a surface inunction, and use habitually little other medicine than the acid. It may be necessary to clear out the *primæ viæ* by an emetic or an aperient, or both; but I have long since given up the use of *purgatives* as not only improper, but very dangerous. A single dose of calomel may be well in the beginning, but no acids should be given with it, or should even follow it speedily. The physician must have forgotten the very *principia* of his profession, who would give muriatic acid, or chlorine in any form, with mercury; though Dr. Wood tells us he has heard of a fatal case where calomel and nitro-muriatic acid were given conjointly. The danger from the association of the vegetable acids with that drug is not so obvious, and may therefore be overlooked. But it has happened that the *vegetable acids* have converted calomel into a more dangerous form of mercury; and a fatal case is recorded merely from its being given in that very popular vehicle, currant-jelly. "Un enfant qui avait pris du calomel sur une tartine de gelée de groseilles, a succombé au bout de quelques heures à un empoisonnement par le bichlorure de mercure; en effet, par suite du contact de l'acide citrique contenu dans le gelée de groseilles, le protochlorure de mercure s'était transformé en bichlorure." (Cited by M. Wahn.) The practical physician should not let such an instance as this escape his memory.

Experiments with Bibron's Antidote to the Poison of Reptiles. By E. M. Walker, M.D., of Gonzales, Texas.—Believing that too much evidence cannot be had upon the efficacy of Bibron's antidote to the poison of reptiles, I forward my experience with it.

I was called, on Wednesday night, 30th June, 1858, to Benjamin Watkins, æt. 35, who had been bitten over the metacarpal bones of the third and fourth fingers of the left hand, on the Sunday previous, by a black moccasin or cotton-mouth of the south, a variety of the *trigonocephalus piscivorus.* The family being absent, he took a pint bottle of whiskey, and after drinking some of it, started to a neighbouring house—fell to the ground after walking about a half mile; arose and made another effort to proceed on the way, fell a second, and a third time; after which he was unable to rise again. He remained where he last fell, in the sun, without water, from about 11 o'clock A. M., until 6½ o'clock P. M., when he was found and carried home. He drank about a pint of whiskey during the day; had some nitrate of potash administered Sunday night. Tuesday had some tea from the curcle burr, with various kinds of poultices to the hand and arm. When I saw him, he was delirious, with occasional lucid moments; pupils much dilated; bathed in profuse perspiration; pulse 120, and very feeble. The hand very much swollen, with some sloughing, and immense sanious discharge. Forearm and arm swollen, with much purple discoloration, and extensive abrasions along the belly of the "biceps flexor cubiti," with sanious discharge. The muscles of the whole chest, back and front, were much swollen, and very tender to the touch, with purple discoloration over the pectoral, deltoid, and scapular muscles of the left side, and dark purple appearance from the clavicle to the ilium of the right side; his breathing deep and very laboured. Gave him in ℥ss whiskey, Bibron's Antidote, gtt. xx; in thirty minutes repeated the same dose, immediately after which he vomited a quantity of white frothy fluid. In an hour repeated the same dose, immediately after which gave him sulph. morphia ¼ grain. Patient continued quite delirious about an hour, when he went to sleep, awaking in two hours. Delirium subsided. Pulse 110. Breathing somewhat relieved. Left him, then, about sunrise. Ordered sulph. quinine gr. iij; camph. pulv. gr. iij; to be given every six hours, and the sloughing and abraded parts to be dressed with charcoal poultices, and all the swollen parts to be bathed frequently in salt water. Having to leave the county for a few days, I procured the services of Dr. McKay in the case during my absence. He continued the treatment two days, when, finding the patient with a furred tongue, gave him a mercurial, and substituted iodide potassa gr. iij, three times a day, for the quinine and camphor, and a stimulating ointment for the poultices, to the sloughing parts, and Lugol's solution of iodine in place of the salt bath to the swollen parts. I saw the case again on Wednesday, July 7th. Continued the iodide potassa. Substituted the charcoal poultice with the addition of a solution of creasote for the stimulating ointment, and suspended Lugol's solution. On Saturday, 10th July, the abrasions on the arm had healed—the sloughing of the hand had extended all over the third and fourth fingers, over the second, third, and fourth metacarpal and unciform bone, on the dorsal aspect of the hand, and all over the palmar surface of the hand extending back to the radio-carpal articulation. In connection with Dr. McKay, amputation of the forearm was determined upon, which I did, performing the double flap operation in the lower third. On the 18th day after the operation, the patient was riding over the country, with the stump entirely healed. Upon examination of the wrist-joint after amputation, found about a drachm of pus in the synovial sac. I think no one can attribute this recovery to any other agent than the bromine compound of Prof. Bibron.

GONZALES, TEXAS, *Aug.*, 1858.

Convulsions after Delivery—Constipation—Capsicum given in Enema—Recovery. By G. W. Yeager, M. D., of Mercer, Pa.

August 16th, 1858. Mrs. P., aged about 25 years, rather below the medium size, but of good form and health, was delivered of her second child at the full time, after an easy and natural labour. The placenta came away thirty or forty minutes after the birth of the child—the bandage was applied as usual, and everything appeared as satisfactory as in any case I ever attended when I left her at eleven o'clock P. M., after giving the usual directions, and leaving some compound cathartic pills to be used if the bowels should not be moved at the end of about twelve hours.

In the morning, eight hours after I had left, I was summoned to see her in haste, with the report that she was dying. I found her just recovering from a convulsion, and although somewhat confused and complaining a little of her head, she was cheerful, and in a short time was apparently well—the uterus firmly contracted and normal both to external and per vaginal examination.

On learning the bowels had been costive for several days, I gave four of the pills, and ordered them to be followed at intervals of half an hour or an hour, with salts and senna, until they should be relieved. As I was about leaving her thus apparently well, and without a single unfavourable symptom, she was suddenly and without premonition, taken with another convulsion, during which there was violent opisthotonos, and her tongue was much lacerated in spite of measures taken to prevent it. The paroxysms which now occurred at intervals of about twenty minutes, simulated precisely those of epilepsy. There was insensibility and jactitation in the intervals. When she became comparatively quiet, after the second fit, I bled her from the arm to about twenty ounces—applied large sinapisms to the feet and legs—kept the head wet with cold water, and gave enemata of turpentine in solution of soap, &c., and with difficulty gave small doses by the mouth, of salts and senna.

The paroxysms or exacerbations recurring without melioration; the conjunctiva injected; the insensibility amounting almost to coma, and the often repeated injections producing no effect, Dr. James Magoffin, my old preceptor, was called in consultation, at whose suggestion the venesection was repeated to about one pint; the sinapisms continued and also applied to the back of the neck, the hair clipped, and spirits and water applied to the head, and an enema of *one drachm of capsicum* in six ounces of water administered. Within five minutes there was a very copious and very fetid evacuation from the bowels, when she immediately became more quiet, though still insensible, and was able to swallow a mixture containing five grains of camphor and one grain of opium, which was repeated in an hour, and afterwards at longer intervals.

The bowels were freely moved several times within twelve hours by the same injection, to which they promptly responded, but appeared insensible to everything else. The patient never had a paroxysm after the first evacuation from the bowels was procured; the insensibility wore off entirely in twenty-four hours, and in the usual time she was well.

The patient had never been the subject of fits at any period of her life.

What I deem of especial interest in the foregoing case, is the peculiarity of the injection (capsicum) suggested by Dr. Magoffin, and which I believe not to have been hitherto employed. If it give, on further trial, the satisfaction which can be fairly anticipated from its effects in this case, we will have obtained what the profession must long have considered a desideratum. I will add nothing more in relation to the *modus operandi*, &c. &c., of the medicine, but it may not be improper to remark, that there has been no complaint of unusual pain or soreness of the rectum.

Case of Poisoning by Seidlitz Powders.—Reported by William P. Buel, M. D., Surgeon Pac. Mail Co.

In the month of June, 1855, I was the medical officer of the steamer *Empire City*, then employed in the transportation of the California mail and passengers between New York City and Aspinwall, N. G.

While on the voyage from N. Y. to the latter place, I was summoned one morning early, before I was out of bed, to see two steerage passengers, represented to be taken suddenly and violently ill, and alleged to be dying. Hurrying to the spot, the first object that presented itself was a man of middle age, whom I shall call A, walking about the deck supported between two other men, making violent convulsive movements with his arms and legs; uttering at the same time, groans and cries of distress. Pausing for a moment to inquire what had occurred, I was entreated by the by-standers to go to the relief of the other man, whom I shall call B, said to be very much worse. I found B lying on his back, prostrate upon the deck, in the most violent tetanic spasms. His face was pallid, bathed with cold perspiration, with an expression of extreme agony. There was a momentary intermission, and the patient, who was perfectly rational, asked me if he must die. I placed my finger for a moment upon his pulse. It was not greatly accelerated, nor different from natural. This momentary lull was followed by another and more violent spasm of the extensor muscles, accompanied with piercing shrieks, or rather yells of agony. It was apparent that whatever was to be done for the man's relief, must be done quickly. There was no time for question or investigation. I ran as quickly as possible to my medicine case for a bottle of chloroform. Was absent not to exceed one minute, but on my return the man was perfectly dead. During my momentary absence the spasm increased in violence, and, uttering a frightful yell, B expired.

I then directed my attention to A, still violently convulsed, but able to speak. He told me that about fifteen minutes previously, himself and B had each taken a Seidlitz powder from a box A had brought with him in his trunk. Their stomachs were perfectly empty, neither having swallowed anything, unless perhaps a little water, since supper the day previous. With the exception of being a little costive, both were in their usual health at the time. Both were rugged-looking men of the labouring class, and of middle age. B *complained very much of the bitterness* of his powder. Said it was the first he had ever taken, and that it should be the last. In a few moments after taking the powder, both were seized in the way I have described.

I lost no time in administering to A large doses of ipecac. and sulph. zinc with copious draughts of tepid water, aided by mechanical titillation to the fauces. Profuse vomiting followed with relief of the symptoms. A large dose of castor oil was then given, followed immediately after its operation by a full anodyne and sinapism to the abdomen and extremities. Next day A was walking about, but complained of debility, and muscular soreness.

I obtained from A the box from which the powders had been taken, with the remaining powders. They were of the ordinary appearance, not very neatly prepared. The box had no label. It had been obtained in Providence, R. I.

On our arrival at Aspinwall, I went with A before the American Consul, where he made his affidavit to the facts above stated. The box was placed in an envelop, sealed with the consular seal, and left in my keeping.

On my return to New York, the box, with the affidavit, was sent to the Mayor of Providence, with a request that a proper investigation might be made into the cause of the death of B, a citizen of Rhode Island. I was afterwards informed that the remaining powders were submitted to a strict chemical analysis by the Professor of Chemistry in Brown University, but without any satisfactory results. Nothing was found which could throw any light upon this sudden and violent death. I did not learn that any experiments were tried upon animals to ascertain if the remaining powders retained any poisonous quality.

Remarks.—1. The death of the man man B was unquestionably caused by the Seidlitz powder, or something it contained. It could be attributed to no other possible cause. No food or drink had been taken for hours previously.

2. The ingredients which enter into the composition of Seidlitz powders, tartaric acid, bicarbonate of soda, tartrate of potass and soda, are perfectly harmless, and by no possible reaction between them or any of their elements could ever become poisonous.

3. Some foreign substance introduced, whether by accident or design, into the powder, must have caused the death. The reader will have observed that the symptoms point strongly to strychnia. The intense bitterness complained of by B favours that idea. It is difficult to imagine how strychnia could have been accidentally introduced. Oxalic acid is a violent poison, and that by a blunder it might have been substituted for tartaric, is not so improbable. But the symptoms were not those of oxalic acid poisoning. On the whole, the conclusion seems to be inevitable, that B's death was caused by strychnia mixed with a Seidlitz; but how, will probably remain forever a mystery.

Successful Case of Ovariotomy performed by Dr. Hazard A. Potter. By CHARLES N. HEWITT, M. D., of Geneva, N. Y.

I herewith transmit the record of a case of ovariotomy. The operation was performed by my partner, Dr. Hazard A. Potter, and I had charge of the patient up to the fifty-first day, when she was discharged.

Mrs. E. S., æt. 25 years, mother of one child, æt. 15 months.

History.—The patient was confined in January, 1857, and had a severe, but natural labour. Menstruation was resumed in April, and continued profusely for two days, and then suddenly ceased. The cessation was followed, not long after, by morning sickness, sharp lancinating pains in the region of the uterus, and pains in the face and teeth. In the early part of June, she first detected a tumour of the size of a goose egg, a little above the pubis, and to the right of the linea alba. It increased rapidly, and about the middle of July she called her family physician, and stated to him her suspicions that she was again pregnant. Upon examination, he found the tumour of the size of a child's head, movable, and extremely tender. Per vaginam he found the os uteri high up and moving with the tumour, and she stated her sensations to be the same as were experienced in her first pregnancy. On the first of September the distension was so great as to include the whole abdomen. The pain caused by the pressure was severe and continued, and she was rapidly failing in health. Drastic cathartics were given, and under their use the distension was somewhat diminished. Once only did the tumour almost entirely disappear—on the 1st of February. It soon returned and continued to increase until she was seen by Dr. Potter, on the 1st of April. At this time her general health was very bad. Appetite poor, digestion deranged, and her body extremely emaciated. She was unable to lie straight in bed, and her abdomen was more distended than it would be were she at the full time with child. It was so tender as scarce to bear the weight of the cloths.

Dr. Potter's diagnosis was ovarian dropsy, and he advised tapping as a sure means of diagnosis and at least of temporary relief. To this the patient consented, and inserting a trocar into the median line, midway between the umbilicus and pubis, he drew off a patent pail and a half of the peculiar ropy secretion of ovarian disease. It was of a pale reddish colour, and on examination proved highly albuminous. Applied broad bandage, and compress, and put her on the immediate use of iron and quinine. Her general health improved up to the 14th inst., although the cyst had attained its former size. On the 14th the operation was performed. The temperature having been raised to between 70° and 80°, the patient was laid on the table. Chloroform was administered, and Dr. Potter proceeded to perform the operation in the usual manner. The external incision in the median line below the umbilicus was about seven inches long. Carefully opening the peritoneum the tumour was exposed. He tapped it and drew off about 28 lbs. of fluid of the same consistence as before, but of a darker colour, more nearly resembling coffee. The cyst was now seen to be multilocular and irregular. Inserting his hand into the peritoneal cavity, he found two adhesions to the anterior walls. One quite extensive near the liver, another in the left lumbar region. These he separated with his hand. On withdrawing the tumour it was found to be of the left ovary, and attached to the uterus by a pedicle of the breadth and thickness of two fingers, as well as by the thickened broad ligament. Around the first a strong linen ligature was securely tied, and then silk ligatures were applied to as many divisions of the broad ligament. The tumour was then removed. On examination the uterus and right ovary were found of the natural size and healthy. The ligatures were left hanging from the lower angle of the external wound, which was closed by six sutures taken down to the peritoneum. Adhesive straps were applied, and a compress, which was retained in place by a corset bandage laced in front, and extending from the ensiform cartilage to the pubis. The patient rallied well from the effects of the chloroform, and was removed to bed. Ordered tinct. opii gtt. lx, in a little brandy and water. 10 P. M. Quiet; skin moist; pulse 120, and soft. Ordered sulph. morphia gr. ¼th. 2d day, 9 A. M. Slept pretty well last night, but feels tired this morning. Tongue coated and moist. Pulse 135, feeble. Skin covered with profuse cold sweat—is in no pain. Ordered sulph. quinia gr. j in a teaspoonful of brandy every four hours. 12 M. Some pain in bowels, colicky in its nature. No distension of the abdomen, nor tenderness except around the wound. Ordered sulph. morphia gr. ¼th every four hours. I was compelled to use this quantity of morphia because previous to the operation she had used it almost constantly for several months. Concentrated beef-tea to be given in small quantities as often as she will take it. 4th day, 6 P. M. Found the patient nearly in a state of collapse. Warm external applications, and brandy, and quinine were freely used, and she soon rallied. I found that, contrary to my express orders, she had been allowed to sit braced up in bed. The discharge from the wound is quite copious. Serum tinged with blood. Not much tenderness on person, except around the wound. Continue same treatment as before. 5th day. Slept well last night, comfortable this morning Relished her broth. Slight fever; pulse 130. Allowed milk and water in equal proportions as a drink. 6 P. M. Signs of another collapse checked by stimulants. 7th day. Complains of severe griping pain last night and this morning in the course of the colon. There is no undue distension or tenderness of the abdomen. Tongue coated, light brown. Pulse 130, and hard. Ordered pill calomel, grs. j, opium gr. ¼th, every three hours till four are taken, followed by ol. ricini ℥ss. 10 P. M. Oil operated freely, bringing away a large quantity of hardened scybala and softened feces. Midnight. Feels better, and soon fell asleep. 8th day. Feels better this morning. Rested well last night. Slight improvement in the appearance of discharge from the wound, not so profuse, and of more consistence. Tongue clean. Pulse 115. Continue quinine and brandy with morphine ter die. 9th day. Improving. Secretion from the wound better; tenderness less. Sweating not so profuse. Ordered sponging with alcohol and tepid water with brisk friction, ter die. Slight chills during the day, and to-night noticed a rash upon face, neck, and chest, attended with much itching, and some fever. 10th day. Slept pretty well last night. Complains this morning of more pain in arch of colon. Ordered injection of milk, water, salt, and castor oil, which effected a free movement of the bowels with great relief. Rash has extended over entire body, but there is not so much fever this morning. Pulse 115. Tongue slightly coated. Continue same treatment. Discontinue use of alcohol and water. 12th day. Called Drs. Potter and Dungan in consultation. The eruption has concentrated upon the face, neck, chest, abdomen, and inside of thighs, but few traces of it elsewhere, and has advanced to the suppurative stage. In their opinion and my own, it bears every resemblance to varioloid, and we think it to be so. The patient is the only one of the family not vaccinated, and the contagion was probably brought to her in the clothes of her family physician, who had been attending a case a few miles distant. The eruption went through its regular stages, and had the effect to prevent suppuration in the wound till the 14th day, when it was established. At this time union by first intention had taken place in all of external incision except that portion occupied by the ligatures, and all the sutures were removed. Appetite good; allowed meat and some vegetable diet. Continue bath of alcohol and water, with brisk friction. Distension and pain in arch of colon continue. Ordered to diminish morphia to two doses, morning and night, and to take ʒjss of Tildin's f'd ext. rhei et sennæ at night. 15th day. Free, but gentle movements of the bowels this morning causing no pain. Continues to improve. 16th day. Slept well last night. Appetite good. Substitute for morphia the following: ℞.—F'd ext. valerian, ℥iij; f'd ext. hyosciamus, ℥j.—M. Dose, ʒss ter die. 18th day. Sat up in bed for an hour. Rapidly improving. Wound suppurating finely. Continue quinine in gr. j doses, ter die, in ½ wine glass of port; ʒj of ext. rhei et sennæ, at night. 24th day. Better. Bowels regular since 14th, without assistance. Continue quinine, and substitute for the port stock ale, ½ tumbler. 30th day. Removed two ligatures. Gaining rapidly. Some difficulty in urinating. Ordered: ℞.—Bals. copaiba, sp'ts nitre dulc., āā f℥j.—M. ʒj twice daily. Bowels regular, with occasional use of ext. rhei et sennæ. 34th day. Sat up in chair two hours to-day; did the same yesterday. Had free evacuation of bowels at 4 P. M., two hours after going to bed. At half past five suddenly attacked by severe pain in region of sacrum, and by rectal tenesmus. Relieved by warm anodyne fomentations to the parts. 8 P. M. Pain has shifted to the region of the wound. Suppuration checked. Pulse 130, and full. Tongue heavily coated. Ordered pill calomel gr. j, opium gr. ¼, every three hours during the night, and poultice over entire abdomen. Midnight. Is easier. 35th day. Slept pretty well last night. Better this morning. Took three pills. No pain, but some tenderness of abdomen. Slight discharge from the vagina. 2 P. M. Bowels moved freely. 8 P. M. Slight mercurial odour in breath, and a little tenderness of the gums. Decided improvement in general symptoms. 36th day. Suppuration fully re-established. Still a little salivation; ordered ℥j f'd ext. rhei et sennæ, and gargle of alum water. Continue other treatment. 50th day. Patient has steadily improved up to this time. Is gaining flesh. Is stronger than she has been for months. Sits up in chair nearly all day. Two ligatures still remain attached, but they are excluded from abdominal cavity—are near the surface and are a source of no irritation. Decided to allow them to remain till they can be readily withdrawn. 51st day. Patient discharged. To continue cold bath, quinine ½ gr., morning and night in ale, and continue use of abdominal bandage. 60th day. Received long letter written by patient. She is rapidly gaining.

Remarks.—The particular point of interest in this case is the occurrence of the eruptive disease, and the total suspension of reparative action in the wound while that disease was at its height. I am inclined to the opinion that the aggravation of symptoms on the 34th day was caused by an attempt at the restoration of the menses. The cyst is deposited in the Wistar Museum of the University of Pennsylvania. One remark as to the diagnosis in this case. The patient first discovered the tumour on the *right* side, and there it remained till it was of such size as to occupy both regions. Although the tumour was multilocular and irregular in form, it could not be discovered to be so, till it was emptied of its contents, and exposed. The irregularity was principally on its posterior wall.

P. S. Dr. Potter sent with this cyst a fibrous tumour of the womb removed from a maiden lady, æt. 43. It was of six years' growth, and weighed with the womb and ovaries which were imbedded in it, 21 lbs. The patient died on the fourth day after the operation from exhaustion.

GENEVA, N. Y., *June* 17*th*, 1858.

DOMESTIC SUMMARY.

Trephining the Lower Jaw for Neuralgia.—Dr. J. MASON WARREN related to the Boston Society for Medical Improvement the case of a lady, about 40 years of age, who, about eight years since, had a neuralgic attack, commencing in the lower jaw, in the neighbourhood of the right bicuspid teeth. One or two teeth were extracted, but the pain still remained in the jaw, which seemed tender and swollen at that point. The neuralgic attack gradually increased, and the pain spread, affecting a great part of the left side of the face, being, at times, of the most excruciating character. During this time, every kind of treatment that the best directed skill and judgment could dictate was employed, without avail. Dr. W. saw her about four years since, in consultation, and suggested an operation, but she declined it, at that time.

For the last six months previous to the operation, her sufferings were so great as to reduce her strength, and confine her to her room, where she moved only from her bed to her sofa, and for the most part was kept under the influence of morphia. Any movement, even of the air near her, was sufficient to excite an attack. Under these circumstances, every other means having failed, and her strength apparently giving way, she made up her mind to the operation. Dr. Perry, her physician, Dr. Blake and Dr. Oliver, assisted. Being well etherized, the jaw was exposed in the vicinity of the masseter muscle, which, being raised, a trephine was applied, and a circle of bone removed, about half an inch in diameter. This exposed the inferior maxillary canal. The nerve was now raised on a probe, and as large a portion as the aperture would admit of removed. A slight dissection was now made, and the inferior maxillary nerve, as it issued from its canal, again divided. The uneven and swollen alveolar processes were next removed, by means of the bone forceps. It should have been before stated, that all the teeth in both jaws had, in the course of her disease, been extracted, but without any relief to her sufferings.

Three months have elapsed since the operation, and there has been no recurrence of the neuralgic pain in her face. She has given up her morphia, resumed her ordinary manner of living, and has taken one or two journeys into the country. One symptom from the operation, it may be interesting to state, is the occurrence of neuralgic pains in the different muscles of the body, on being brought into action, after long disuse. These, however, are of a supportable character.

The operation, in this case, may be considered as thus far entirely successful; and even if the pain should recur, the number of months of freedom from suffering, after so many years of torment, will allow the system time to rally, and better support its return.—*Boston Med. and Surg. Journ.*, Aug. 19th, 1858.

Experiments with Bibron's Antidote.—Dr. A. M. Sabal, Riceboro', Liberty Co., Ga., reports (*Savannah Journ. Med.*, Sept., 1858) the following:—

1*st Experiment.*—This dog was bitten just at the sacro-lumbar articulation; was quite thin in flesh, and weak. In four minutes from the reception of the wound, he staggered and fell; from that time, he could no longer support himself; twelve minutes after, he vomited blood freely. I now administered a dose of "Bibron's Antidote." He seemed to revive almost immediately, and attempted to regain his feet, but his efforts proved abortive; fifteen minutes from the administration of the first dose, I exhibited a second (ten drops) of the mixture. He again revived for a few minutes, but could not move. Twelve minutes afterwards, six drops of the mixture were given him. He died in taking it.

This dog died in forty-three minutes from the time he was bitten; there was little or no swelling, his eyes became perfectly green several minutes before death, his tongue contracted to one-half its normal size, and became of a dark, purplish colour.

2*d Exp.*—This dog was fine, fat, and hearty. He was caused to be bitten three times in the flank; did not show any symptoms of uneasiness for fifteen minutes, when all at once he began to swell rapidly, whine, and stretch himself, as if much distressed; ten drops of the Bromine mixture were administered, and he seemed much better. Fifteen minutes after, he began to be quite sick, froth at the mouth, &c.; a second dose was administered, in same proportion as the first; he revived the moment he took it, and has been well ever since, with the exception of a swollen leg, which lasted twenty-four hours, and gradually disappeared.

3*d Exp.*—This dog was caused to be bitten in the leg, in two different places, severely. He immediately became sick, and vomited freely the contents of his stomach; subsequently he vomited frothy blood, and bled at the nose. The antidote was administered, twenty minutes from the reception of the wounds, in six-drop doses, and repeated every ten minutes, until four doses were taken. This dog became perfectly well, but was quite sick for six hours, at the end of which time a fifth dose was given him. His leg remained swollen for two days.

4*th Exp.*—A dog, thin in flesh, but old, caused to be bitten in the side and foreleg. The medicine was administered as in all other cases; he lived thirty hours, and died. This dog was enormously swollen after death; not so with any of the others that died.

5*th Exp.*—A young dog, bitten in the neck. This dog lived five hours, under the administration of the medicine, but, being called off, I neglected him, and was informed he died apparently of suffocation.

6th Exp.—This dog was bitten in the flank, received all attention, but died in an hour and a half.

Veratrum Viride.—Dr. H. H. Toland, of San Francisco, Cal., states (*Pacific Med. and Surg. Journ.*, March, 1858) that he has found this plant "invaluable in pneumonia, pleuritis, and catarrhal fever, after moderate depletion, and especially applicable to the treatment of these diseases in children, the pulse being diminished from fifty to seventy-five beats in a minute, in ten or twelve hours, without either nausea or any other unpleasant symptom being produced. Upon adults it acts as powerfully, and its effects are as speedily produced; and the pulse may be reduced to thirty-five without either distress or danger.

"Although it cannot be considered a curative agent in typhoid fever, which is the most prevalent febrile disease in San Francisco, the increased arterial action may not only be controlled, but the suffering of the patient and the ravages of the local difficulty greatly diminished, by combining this with other remedies. Recently in the treatment of several violent and obstinate cases the pulse has been kept below seventy, and a more rapid and safe recovery thereby obtained.

"Having administered it alone in one of the most painful and unmanageable of the curable diseases incident to the country, rheumatism, particularly in the acute stage, I have found it more efficacious than any remedy that has heretofore been employed; besides controlling the action of the heart, it relieves pain, and is more decidedly diuretic than even colchicum. When venesection is resorted to in acute rheumatism to diminish arterial action, metastasis to the heart frequently occurs, and that organ becomes incurably diseased, which could not result from the use of the veratrum, by which the same indication can be as certainly and more speedily fulfilled.

"In acute carditis resulting from exposure, in a child 7 years of age, accompanied with the most violent and aggravated symptoms of that formidable disease, the excessive action of the organ was controlled in less than twenty-four hours, and the influence of the remedy maintained until the disease entirely disappeared, without the aid of any other treatment except external irritation.

"If it were useful only in acute rheumatism and rheumatic carditis as well as in acute and chronic inflammations of that organ, it is invaluable, particularly in California, where so many are afflicted, by exposure, with these distressing and always obstinate diseases.

"It has also been highly recommended in gout and gouty rheumatism, but of its efficacy in these affections I am unable, from experience, to give an opinion, as they seldom occur in California, which does not result from the temperance of its inhabitants, but from their great activity.

"As might be inferred from its specific action upon the heart, it is invaluable in active hemorrhage. In one of the most obstinate and protracted cases of uterine hemorrhage that I have ever treated, after every other remedy had failed, the veratrum was administered alone, and the disease was not only controlled but permanently cured. During the convalescence, the precipitated carbonate of iron was combined with the veratrum, and continued until the red globules of the blood were restored.

"Hæmoptysis, accompanied with increased arterial action, is arrested more speedily and effectually by this article, than by any combination of remedies that have heretofore been prescribed, although it does not appear to exert a direct influence over the respiratory organs.

"Although the veratrum is useful to the physician, to the surgeon it is indispensable. In traumatic fever, resulting either from injuries or surgical operations, its specific effect is more speedily produced: a few doses will reduce the pulse, even when greatly accelerated to the healthy standard, at which it can easily be retained until the cause subsides.

"After an operation for aneurism of any of the large arteries, the action of the heart can be easily controlled, by which the danger of secondary hemorrhage is greatly diminished. Instead of being compelled to resort to venesection, to diminish vascular action, which necessarily interferes in a greater or less degree with the restorative process, the effect can be produced and maintained until the irritation resulting from the wound subsides, and the system accommodates itself to the derangement of the circulation necessarily resulting from the obliteration of a large arterial trunk.

"This remedy has been prescribed during the last six months in every disease accompanied with increased vascular action, which I have been required to treat, sometimes alone, but more frequently in combination with other remedies, with the same result—and is, when given in doses corresponding with the age of the patient, perfectly safe and reliable.

"Although it may be supposed that I place too high an estimate upon the virtues of the veratrum, I know that I have written nothing but what has been observed, and nothing more than justice to the remedy, and a duty I owe the profession requires. It is useful in the treatment of miasmatic and typhoid fevers, and invaluable in the management of traumatic fever, rheumatism—both acute and chronic—and active hemorrhage, and may be given in cases of emergency as an emetic, although it is neither considered valuable nor proper."

The preparation which Dr. Toland has principally used is Thayer's fluid extract, prepared at Cambridge, Mass. Four drops of this given every two hours has never failed, he says, to diminish the frequency of the pulse.

Veratrum Viride as an Arterial Sedative.—Dr. T. S. Smith, of Murfreesboro', Tenn., reports (*Nashville Journ. Med. and Surg.*) four cases of pneumonia, in which he gave the veratrum. He states that in his "experience the veratrum does not reduce the force and fulness of the pulse in proportion to the reduction of frequency—that it only reduces the frequency, while the force and fulness seem to assume a nearly normal standard. When the frequency of the heart's action is lessened, the heat of skin, thirst, and pain, consequent upon inflammation, subside, and free perspiration is often induced."

Sulphate of Cinchonia an economical Substitute for Quinia.—Dr. F. P. Porcher states (*Charleston Med. Journ.*, July, 1858) that he has successfully treated fifty-one cases of malarial fever (intermittent and remittent) in the Marine Hospital, Charleston, with the sulphate of cinchonia. His formula was as follows: ℞.—Sulph. cinchon. gr. x; Morphiæ gr. $\frac{1}{8}$; Acid-sulph. aromat. gtt. x. M. To be given three times a day. Dr. Cain had also previously employed this article in the hospital with favourable results.

Remedy for Dysmenorrhœa and consequent Sterility.—Dr. E. D. Fenner states (*New Orleans Med. News*, &c., July, 1858) that he has used for some years in the treatment of dysmenorrhœa with great success the following mixture, originally recommended by Dr. Falk, of London: ℞.—Gum guaiac ℥i; Balsam canadense ℥i; Ol. sassafras ʒii; Merc. corrosiv. sublimat. ℈i; Rect. spt. vini (alcohol) ℥viii. "Dissolve the guaiac and balsam in one-half the spirit, and the corrosive sublimate in the other. Let the guaiac and balsam digest for several days; then pour off the clear liquor, mix with the sublimate, and add the oil. Dose. Ten or twenty drops night and morning in a glass of wine or water, *pro re nata.*"

This was called by Dr. Falk "*Tinctura Antacrida.*"

Dr. Fenner says that he usually directs the patient to begin a day or two before the expected period and take twenty-five drops in an infusion of sage or sweetened water, night and morning, until the discharge is freely established; then cease till the next period. In obstinate and severe cases, the medicine should be commenced a week or ten days before the period; and if the pain appears, the medicine should be taken every four or six hours till relieved. The pain usually disappears as soon as the discharge becomes free; but in most cases the discharge comes on without pain after taking a few doses. I have known immediate relief to be given by a single dose taken in the paroxysm; but I have seen cases in which the pain was excruciating, causing shrieks and even violent convulsions. In such I have had to resort to a more prompt and efficient anæsthetic, as the inhalation of chloroform, or the following, which I have often known to act like a charm: ℞.—Spirit camphor ʒiii;

Chloroform ʒii ; Tinct. opii ʒi.—M. S.—A teaspoonful in sweetened water once an hour till relieved.

In violent hysterical spasms there is nothing comparable to the inhalation of chloroform. In the treatment of dysmenorrhœa, it is important to obviate costiveness by the use of aloetic pills. When dysmenorrhœa is relieved by this treatment, conception almost invariably soon occurs in married women.

Results of Twenty-eight Operations for Stone in the Bladder.—Dr. P. C. Spencer reported in this Journal (No. for July, 1850, p. 103), fifteen operations for lithotomy, and in the *Virginia Med. Journ.* (July, 1858), he reports thirteen more cases, making 28 in all, two only of which were followed by a fatal result. Dr. S. operates with the *lithotome caché* of Baron Dupuytren.

The following table exhibits a few particulars of these cases and their results:—

No.	Age.	Colour.	Urine passed per Urethram.	RESULTS.
I.	4	Black,	—	Died in 12 hours.
II.	17	White,	—	Died on 4th day.
III.	35	Black,	8th day.	Discharged cured on the 30th day.
IV.	18	Black,	15th "	" " 40th "
V.	7	White,	5th "	" " 25th "
VI.	9	White,	—	" " 40th "
VII.	5	Black,	10th "	" " 30th "
VIII.	4	White,	8th "	" " 30th "
IX.	18	White,	—	
X.	27	White,	10th "	" " 25th "
XI.	4	White,	3d "	" " 19th "
XII.	4	Black,	5th "	" " 25th "
XIII.	7	White,	10th "	" " 30th "
XIV.	4	Black,	4th "	" " 22d "
XV.	28	White,	11th "	
XVI.	17	Black,	—	" " 84th "
XVII.	11	White,	8th "	" " 25th "
XVIII.	8	White,	17th "	
XIX.	64	White,	15th "	" " 23d "
XX.	8	White,	13th "	" " 18th "
XXI	10	Black,	10th "	" " 15th "
XXII.	61	Black,	—	
XXIII.	9	White,	30th "	
XXIV.	9	White,	39th "	" " 50th "
XXV.	11	Black,	3d "	" " 30th "
XXVI.	25	Black,	—	" " 75th "
XXVII.	—	White,	1st "	" " 12th "
XXVIII.	20	White,	10th "	" " 16th "

Extirpation of the Parotid Gland.—Dr. Frank H. Hamilton records (*Buffalo Med. Journ.*, May, 1858) a case of tumour of the parotid gland, in which he extirpated the mass, including the entire gland. Dr. Austin Flint, Jr., describes the microscopical appearances of a portion of the removed tumour, showing the existence in it of glandular structure.

Removal of the Scapula.—Dr. Geo. C. Blackman reports (*Cincinnati Lancet and Observer*, Aug. 1858) a case of necrosis and caries of the scapula, in which he removed the entire bone with the exception of the glenoid cavity and a portion of the coracoid process. The patient left for home on the 14th day with the wound healed, and having every prospect of a useful arm.

Method of Preserving Specimens of Diseased Membranes.—Dr. R. D. Arnold, of Savannah, describes (*Savannah Journal of Med.*, July, 1858) the following method, which he has pursued for the last three years.

"The specimen is well washed, one side is then sprinkled with arsenic, but not too thickly. The piece is then spread out on a pane of glass. The free surface is then thickly powdered with arsenic, which is renewed as soon as it is absorbed—the specimen must be kept in the shade. When it is dry, it is covered with a coat of white varnish. After that has dried, another pane of glass is put over it and the whole is then put in a frame.

"By this method, the specimen is preserved exactly as it comes from the subject."

—

Persulphate of Iron as an Hæmostatic.—Dr. H. H. Toland records (*Pacific Medical and Surgical Journal*, July, 1858) three cases in which vessels of considerable magnitude were wounded, in which he employed with entire success the persalt of iron recommended as a hæmostatic by M. Monsel, Surgeon to the Military Hospital at Bordeaux.

The following are M. M.'s directions for preparing it:—

"Water distilled, 100 grammes; sulphuric acid (69 deg. B.), 10 grammes. Place the above in a porcelain capsule capable of holding one-half a litre. To this add protosulphate iron, 50 grammes. When the salt is dissolved, and the solution has reached a boiling point, add, in small quantities, nitric acid (35 deg. B.), 16 grammes. During this process there is disengaged, an abundance of nitric oxide vapour, which ceases to be eliminated in a short time. As soon as the red vapours cease to be given off freely, there is again added, in small quantities at a time, protosulphate iron, 50 grammes. This second addition of the iron salt, again sets free the nitric oxide; the solution is boiled till this ceases.

"Hot water is now added until the volume of 100 grammes is obtained, and the solution is now set aside to cool, after which it is carefully filtered.

"The solution is transparent, having a deep, reddish-brown colour, inodorous, extremely astringent taste without causticity, and should mark 45 deg. *pese sels.* After thirty-six hours' standing, there is separated spontaneously, an insoluble powder falling to the bottom, and, after it ceases to precipitate, the solution is again filtered.

"The filtered fluid is now concentrated by boiling, to the consistence of honey, when it is poured on to plates of glass in thin layers, and dried in a stove at 35 deg. centigrade (95 deg. Fahr.). When thus prepared it forms reddish scales much resembling citrate of iron; they contain 25-100ths water. If the heat is carried above 100 Fahr., the salt becomes anhydrous, and has a greenish tint. When prepared as directed, it dissolves in water and alcohol without any decomposition. The solution in water with a density of 45 deg. (B.) is capable of dissolving peroxide of iron by long digestion, and loses its colour on the addition of sulphuric acid.

"Its action on blood and albumen is powerful, and on blood somewhat peculiar. It produces with the latter a voluminous clot, *absolutely insoluble*, which continues to enlarge for several hours after its application, and becomes quite hard and firm. The following is the formula by which this new salt is expressed: $5SO_3.2FeO_3$."

This salt, Dr. Toland states, "if applied to a superficial wound as soon as made, not a drop of blood escapes, and no pain results from the application. It acts by producing instantaneous coagulation of the blood, and will be found invaluable in hemorrhage from the mouth, nose, and throat, when it is impossible to ligate the vessels, and may be equally efficacious in alarming uterine hemorrhages, either active or passive. In solution it could be readily applied; it is very deliquescent, and dissolves speedily in water. I hope the profession will give it a trial, as I believe it to be the most valuable article of this class that has ever been discovered."

—

Ovariotomy—the Pedicle severed by the Ecraseur.—Dr. J. L. Atlee, of Lancaster, Penn'a, reports (*N. A. Med.-Chirurg. Rev.*, July, 1858) a case in which he removed an ovarian tumour, severing the pedicle with the *écraseur.* Dr. A. says that with the écraseur to sever the pedicle, and the use of the silver suture and silver ligature, where ligatures are necessary, he is satisfied that a very large share of the dangers attending the operation will be obviated.

Five Cases of Cataract in One Family.—We have noticed (p. 551) the occurrence of six cases of cataract in the same family, and Dr. H. W. Williams records (*Boston Med. and Surg. Journal*, Sept. 23, 1858) having met with five cases in a German family, a mother and four children, all affected with cataract in both eyes. The mother was not aware of any other cases among her brothers and sisters.

Dr. W. says he has seen another instance of seven cases in one family.

New Publications.—We have on our table several new works which reached us too late for special notice, and the appearance of which we can only at present announce. They shall be noticed more particularly in our next.

We can congratulate the profession on the issue of a new edition of Watson's Classical *Lectures on the Principles and Practice of Physic*. This edition has been thoroughly revised by the author, and "whatever of value recent researches have added to our stock of knowledge in the various departments of medical science has been carefully incorporated in them."

The American editor has further increased the value of the work by rendering more full and complete the observations relating to the forms of disease which prevail in this country, and by introducing a very large number of woodcuts illustrative of pathological changes in the various organs.

We know of no volume in our language which contains so large a mass of valuable matter to the practicing physician.

There is one point to which we must call attention, the low price at which this American edition is furnished, and which places it within the reach of every member of the profession. This enormous volume of 1,224 imperial octavo pages, with 185 illustrations on wood, is sold for four dollars and a quarter, while the English edition cannot be imported and sold here for less than ten dollars.

We are also pleased to announce the publication of a compendium of the Diagnosis, Pathology, and Treatment of the Diseases of the Urinary Organs, by W. W. Morland, M. D. This volume contains the substance of two Essays which obtained the Boylston prizes for the years 1855 and 1857.

Messrs. Blanchard & Lea have also just published a new edition of Wilson's Human Anatomy, edited by Prof. W. H. Gobrecht. This edition has been thoroughly revised and enlarged, and greatly improved.

We have the gratification also to announce the issue, by Messrs. Blanchard & Lea, of the second part of West's Lectures on Diseases of Women, which completes the work. We refer the subscribers to the Medical News and Library to the publishers' advertisement in this No., which will inform them of the terms on which they can complete their copies of these Lectures.

INDEX.

A.

Abdominal wound, recovery, 253
Abscess in aneurismal sac, 94
Absorption of medicinal substances from large intestine, 214
Aconite, tincture of aconite as a preventive of rigor after introduction of bougie, 246
Afflick, insanity, 465
——— ergot, 466
Alison, diagnosis of phthisis at its commencement, 525
Alkalies, influence of caustic, on belladonna, stramonium, &c., 512
Amaurosis, 548
American Medical Association, review of Transactions of, 109
Amputation at shoulder-joint of a gangrenous arm, 67
Amyloid degeneration, 225
Anæsthetic powers of carbonic acid gas in diseases of female bladder, 558
Anciaux, local application in erysipelas, 519
Aneurism, axillary, 229
——— of thoracic aorta, 48
——— popliteal, cure of by digital compression, 234
——— popliteal, cured by pressure, 239
——— treatment of by manipulation, 188
Aneurismal sac, abscess in, 94
Anti-asthmatic cigarettes, 204
Apparatus for fractured thigh, 394
Aqueous humour, evacuation of in eye diseases, 262
Aran, laudanum in painful affections of uterus, 557
Armstrong, naval hygiene and scurvy, review of, 438
Arnold, method of preserving specimens of diseased membranes, 578
Arsenic in subnitrate of bismuth, 99
——— two ounces taken, 77
Arsenical poisoning, 99
Arterial sedative, veratrum viride as, 324, 576, 577
Artificial anus spontaneously cured, 79
Asthenopia, secale cornutum in, 550
Asthma, effect of local influences on, 523
Axillary aneurism, ligature of subclavian, 229

B.

Babington, premature discharge of liquor amnii, 266
Bache, sun-stroke, 407
Bader, excision of portion of iris for glaucoma, 262
Baker, ergot and forceps in labour, 452
Balfour and Begbie, Rottlera tinctoria for tapeworm, 214
Barnett, poisoning by arsenic, 454
Barthez, action of chlorates of soda and potash on false membranes from air passages, 513
Bastick, chemistry of caustics, 205
Batchelder on paralysis of motion, notice of, 500
Belladonna as a means of arresting secretion of milk, 283
Belmont Medical Society, notice of Transactions of, 465
Bennett, congenital fissure of sternum, 197
Bennett's clinical lectures, review of, 429
Berkett, cancer, 486
Bibliographical notices, 161
——— Batchelder, Paralysis of Motion, 500
——— Brown-Séquard's Journal de Physiologie, 505
——— Brown-Séquard on Epilepsy, 488
——— Coote on Syphilis, 503
——— Eve, Diseases of Cervix Uteri, 495
——— Guy's Hospital Reports, 475
——— Jones on Malarial Fever, 498
——— Medico-Chirurgical Transactions, 188
——— Ophthalmic Hospital Reports, 194
——— Paine's Institutes of Medicine, 163
——— Provincial Lunatic Asylum of New Brunswick, 193
——— Reports of American Institutions for the Insane, 174, 468
——— Smith and Barker on Puerperal Fever, 168
——— Smith's Manual of Obstetrics, 192
——— Transactions of American Medical Societies, 449
——— Wood and Bache, Dispensatory of the U. S., 161
——— Wood's Practice of Physic, 474
Bibron's antidote, 567, 575
Blackman, removal of scapula, 578
Bladder, anæsthetic powers of carbonic acid in diseases of female, 558
Blood-corpuscles, pathological characters of, 196
Bond, melanosis, 106
Brachet, curative influence of pregnancy on prolapsus uteri, 270
Brainard, empyema treated by injections of iodine, 289
Brinsmade, statistics of private practice, 456
Briquet, absorption of medicinal substances from large intestine, 214

Brodhurst, forcible extension and rupture of uniting medium of partially anchylosed surfaces, 190
Brown, epidemic typhoid pneumonia, 330
Brown-Séquard, epilepsy, notice of, 488
——— journal of physiology, notice of, 505
——— physiology of nervous system, 510
Brun, double salt of nitrate of silver and of soda, 206
Bryant, fracture of femur within the capsule, 241
——— lithotomy, 484
Bucknill and Tuke, psychological medicine, review of, 403
Budd, sugar and diabetes, 217
Buel, poisoning by Seidlitz powders, 570
Bursæ, treatment of enlarged, 246
Butler Hospital, notice of report of, 182

C.

Camphor, poisoning by, 281
Campouillon, diet in phthisis, 525
Cancer and abscess of liver, 411
——— secondary of pleura, 334
Cancer of clitoris, 398
——— neck, 399
Capsicum in enema, 569
Carbonic acid gas, anæsthetic powers of in diseases of female bladder, 558
Carcinomatous growth removed by pen and escharotics, 545
Carnochan, removal of lower four-fifths of radius, 89
Carson, sunstroke, 407
Caseaux, condition of cervix uteri during latter half of pregnancy, 555
Cataract, posterior division, 264
——— several cases in same family, 551, 579
Catlin, legitimate medicine, 457
Caustic lint for treatment of ulcers, 545
——— pencil of nitrate of silver and of soda, 206
Caustics, chemistry of, 205
Cazeaux on puerperal fever, 277
Cerebro-spinal meningitis, 451, 452
Cervix uteri, condition of in latter half of pregnancy, 555
Chaillou, statistics of tracheotomy in croup, 251
Children, how many can a woman bear, 554
Chlorates of soda and potash, action of on false membranes from air-passages, 513
Chloride of zinc and glycerine, ophthalmia of newborn children, 551
Chloroform, death from inhalation of, 41
——— as a narcotic, 201
——— death from, 281
Cigarettes, anti-asthmatic, 204
Cock, trephining skull for rupture of meningeal artery, 487
Cod-liver oil, action of, 213
——— dog's fat as a substitute for, 375
College of Physicians of Philadelphia, Transactions of, 93, 379
Colour, inability to distinguish, 394
Condie, nocturnal incontinence of urine, 392
Conium maculatum, poisoning by, 564
Connecticut Medical Society, notice of Transactions of, 457
Consumption, diagnosis of at its commencement, 524
——— diet in, 525
Continued fever, etiology of, 207
Convulsions, capsicum enema in, 569
Coote, gutta percha bougie in bladder, 249
——— syphilis, notice of, 503
——— resection of head of femur, 241
Corbett, severe abdominal wound, recovery, 253
Corse, cancer of clitoris, 398
——— neck, 399.
——— craniotomy, 97
——— foreign body in ear, 408
——— gangrena oris, 93
Coulson, affections of joints following operations on genito-urinary organs, 539
——— treatment of enlarged bursæ, 246
——— lithontritic instruments in cases of enlarged prostate, 247
Craniotomy, 97
Crawcour, constitutional effects produced by substances introduced in urethra, 290
Croup, tracheotomy in, 189, 251
Cumming, natural and artificial lactation, 25
Cusack, speedy cure of popliteal aneurism by pressure, 239
Cystic tumours impeding delivery, 291

D.

Dannecy, syrup of proto-carbonate of iron, 203
Dawson, report on surgery, 462
Davy, ganglionic nervous system, review of, 445
Deafness, diagnosis of, 536
De Beauvais, uva ursi as an obstetric agent, 557
Delivery without pain, 270, 341
Delondre and Labarraque on quinium, 202
De Ricci, therapeutical uses of strychnia, 517
Diabetes from cerebral disease, 527
——— rationale of saccharine treatment of, 528
——— sugar in, 217
Diphtheria, 220, 522
Diphtheritic affections, 519
——— angina, epidemic at Lima, 520
Diseased membranes, method of preserving specimens of, 578
Dispensatory of the U. S., notice of, 161
Dog's fat as a substitute for cod-liver oil, 375
Dynamoscopy, 360
Dysmenorrhœa, remedy for, 577

E.

Ear, foreign body in, 408
Edwards, rupture of external iliac, ligature of common iliac, 231
Elsasser, menstruation during pregnancy, 266
Empyema treated by injections of iodine, 289
Encephalon, contributions to pathology of disease of, 59
Epilepsy, Brown-Séquard on, 488
Ergot in asthenopia, 550

Erhard, diagnosis of deafness, 536
Erysipelas, local application in, 519
Eve, diseases of cervix uteri, notice of, 495
——, piece of tin in trachea, 290
Eye, accommodation of, 510
Eyeball, sympathetic inflammation of, 547
External iliac, rupture of, 231
Extra-uterine pregnancy, 44

F.

Femur, fracture of within the capsule, 241
——— fracture through trochanters, 542
——— reduction of dislocations of by manipulation, 286
——— resection of head of, 211
Fenner, remedy for dysmenorrhœa, 577
Fergusson, treatment of aneurism by manipulation, 188
Fibula, excision of entire, 357
Foster, absence of left kidney, 511
——— surgical cases, 480
Fracture of sternum during labour, 272
Freeman, human longevity, 455
Friends' Asylum Report, notice of, 472
Fuller, tracheotomy in croup, 189
Funcke, urea in healthy urine, 510

G.

Gallstone arrested in small intestine, 285
Galvanism, action of on contractile tissue of uterus, 268
Gangrena oris, 93
Gardiner, nigrities, 454
Garrod, influence of caustic alkalies on henbane, belladonna, &c., 512
——— researches on gout, 532
Gaston, dynamoscopy, 360
——— veratrum viride, 465
Geddings' Lectures on Surgery, review of, 124
Gerhard, uterus of a patient who had died whilst menstruating, 410
Giraldes, new structure in spermatic cord, 509
Glaucoma, surgical treatment of, 254, 257, 262
Gout, researches on, 532
——— case of, 400
Graefe, accommodation of eye, 510
Gray, shortening of labour, 557
Gros, pepsine in obstinate vomiting of pregnancy, 554
Guillot, development of teeth, 511
Gull, abscess of brain, 485
—— paraplegia, 486
Gutta percha bougie in bladder, 249
Guy's Hospital Reports, notice of, 475

H.

Habershon, purpura, 479
——— double fœtus, 480
Hæmatocele, case of, 81
Hæmoptysis, diagnostical and prognostical value of, 210
Hæmostatic, persulphate of iron as, 579
Halsey, stricture of urethra treated by Syme's method, 72
Hamilton and Bell, case of amaurosis, 548
——— extirpation of parotid gland, 578
Hamilton, reduction of dislocations of femur by manipulation, 286
Hammond, death from inhalation of chloroform, 41
——— amputation at shoulder-joint of a gangrenous arm, 67
Hartshorne, new apparatus for fracture of thigh, 394
Harvey, rupture of uterus, 274
Hassal, medical treatment and diagnosis of stone in the bladder, 540
Hays, inability to distinguish colours, 394
Hennessy, pathological characters of blood-corpuscles, 196
Hewitt, case of ovariotomy, 571
Hewson, nocturnal incontinence of urine, 379
——— sickbed, 101
Holston, report on obstetrics, 461
Hooker's Rational Therapeutics, review of, 129
Hughes, black urinary deposit, 487
Hulke, surgical treatment of glaucoma, 254
Humphrey, excision of knee, 243
Hymen, impregnation without rupture of, 290
Hyoscyamus, narcotism from extract of, 96

I.

Iliac artery, ligature of common for rupture of external, 231
Impregnation without rupture of hymen, 290
Indian hemp in tetanus, 538
Inflammation, early stage of, 226
Insanity, influence of pregnancy and delivery on, 269
Intestinal hemorrhage, is it diagnostic of typhus or typhoid fever, 209
Inverted uterus reduced, 13, 270
Iodide of calcium, 519
——— of iron, value of, 516
——— of lime, 204
——— of potassium for dispersion of milk, 561
Iridectomy in various diseases of the eyes, 257
Isambert, diphtheritic affections, 519

J.

Jackson, excision of entire fibula, 354
——— removal of large urethro-vesical calculus, 87
——— two ounces of arsenic taken without fatal result, 77
Jauncey, medicinal action of lupuline, 198
Johns, anæsthetic powers of carbonic acid gas in diseases of female bladder, 558
Johnston, extra-uterine pregnancy, 44
Joints, affections of following operations on genito-urinary organs, 539
Jones and Mackenzie, iridectomy in diseases of eye, 257
—— malarial fever, notice of, 498
Joseph, ovariotomy, 254

K.

Keating, narcotism from extract of hyoscyamus, 96
Keller, cystic tumours impeding delivery, 291
Kendall, cerebro-spinal meningitis, 451

Kennedy, is intestinal hemorrhage diagnostic of typhus or typhoid fever, 209
Kentucky, notice of report of Eastern Lunatic Asylum of, 174
Kerchsteiner, incubation of measles, 536
Kidney, absence of left, 511
Knee, excision of, 243
Kyle, veratrum viride, 463

L.

Labour, shortening of, 557
Lachrymal canaliculi, malposition of, 550
Lactation, natural and artificial, 25
Lacteal fluid, flow of in mesentery, 195
Larch bark, therapeutic properties of, 201
Larynx, size of in male and female, 546
Lawson, yellow fever, 209
Leasure, death from gallstone, 285
——— spontaneous cure of artificial anus, 79
Lebert, abdominal typhus, 533
Lente, contribution to pathology of disease of encephalon, 59
Leudet, diabetes from cerebral disease, 527
Levick, cancer and abscess of liver, 411
——— exhaustion from sun-stroke, 404
——— melanosis of supra-renal capsules, 98
——— typhoid fever without tympanites, 403
Lindsley, puerperal convulsions, 458
Liquor amnii, premature discharge of, 256, 342
Lister, early stage of inflammation, 226
——— flow of lacteal fluid in mesentery, 195
Lithontritic instruments in cases of enlarged prostate, 247
Lithotomy, statistics of 28 operations, 578
Long, tincture of aconite as a preventive of rigor after introduction of bougie, 246
Lucchetti and Posta, fracture of sternum during labour, 272
Lung, condition of as a proof the infant was born alive, 280
Lupuline, medicinal action of, 198

M.

Maccoun, yellow fever on board the Susquehanna, 324
Mackenzie, action of galvanism on contractile tissue of gravid uterus, 268
Macmillan, chloride of zinc and glycerine in ophthalmia of new-born children, 551
Maine Insane Hospital, notice of report of, 187
Malarial fever, notice of Jones on, 498
Manipulation, reduction of dislocation by, 286
March, osseous union of intra-capsular fractures, 454
——— urinary calculi, 454
Markham, disease of the heart, 191
Martin, evacuation of aqueous humour in eye diseases, 262
——— posterior division of cataract, 264
Martini, congenital absence of supra-renal capsules, 225
Massachusetts State Lunatic Asylum at Worcester, notice of report of, 183
Maund, death from swallowing turpentine, 561
McDowell, fracture of skull with protrusion of brain, 85
McLean Asylum, notice of report of, 174
McMeens, topographical, &c., report, 463
McSherry, midwifery cases, 352
——— death of an infant from spontaneous hemorrhage, 356
——— dog's fat as a substitute for cod-liver oil, 375
——— muriatic acid in scarlet fever, 567
Mead, insanity, 464
Measles, incubation of, 536
Medico-Chirurgical Transactions, notice of, 188
Melanosis, 106
——— of supra-renal capsules, 98
Menstruation during pregnancy, 266
——— in Austria, 552
Mesentery, flow of lacteal fluid in, 195
Metallic sutures and metallic ligatures, 545
Midwifery cases, 341, 352
——— meddlesome, 345
Milk, iodide of potassium for dispersion of, 561
Miller, belladonna as a means of arresting secretion of milk, 283
Moore, therapeutic properties of larch bark, 201
Mount Hope Institution, notice of report of, 180
Murchison, etiology of continued fever, 207
——— fistula of stomach, 218
Muriatic acid in scarlet fever, 567

N.

Narcotism from extract of hyoscyamus, 96
Neil, fractures of scapula, 105
Nervous system, physiology of, 570
Neuralgia, trephining lower jaw for, 574
New Brunswick, notice of Report of Provincial Lunatic Asylum of, 193
New Jersey State Lunatic Asylum Report, notice of, 471
New York State Medical Society, Transactions, notice of, 449.
——— Lunatic Asylum Report, notice of, 468
——— City Lunatic Asylum Report, notice of, 470
Nocturnal incontinence of urine, 379

O.

Ogle, influence of cervical portions of sympathetic nerve on eye, 546
Ohio State Medical Society, Transactions, notice of, 461
Oldham, retention of menses, 485
Ophthalmia of new-born children, chloride of zinc and glycerine in, 551
Ophthalmic Hospital Reports, notice of, 194
Oppolzer, ovarian dropsy cured by puncture, 544
Orton, amylene as an anæsthetic, 450
Ovarian dropsy cured by puncture, 544
Ovariotomy, 254, 364, 571, 579

P.

Packard, aneurism of thoracic aorta, 48
——— hæmatocele, 81

Packard, post-mortem appearances of the uterus during menstruation, 411
Paine's Institutes of Medicine, notice of, 163
Parotid gland, extirpation of, 578
Peacock on Malformations, &c., of the Human Heart, review of, 153
Peaslee, ovariotomy, 364
Peete, treatment of ranula, 283
Pennsylvania, notice of report of State Lunatic Hospital of, 178
——— Hospital for the Insane, notice of report of, 179
Pepsine in obstinate vomiting of pregnancy, 554
Perspiration, urea in healthy, 510
Pidduck, iodide of calcium, 204, 519
Pirrie, axillary aneurism, ligature of subclavian, 229
Playfair, rupture of spleen, 563
Poisoning by camphor, 284
——— by conium maculatum, 564
——— by oil of turpentine, 564
——— by Seidlitz powders, 570
Poland, tetanus, 475
——— urethro-vesical calculus, 487
Popliteal aneurisms treated by digital compression, 234
——— speedily cured by pressure, 239
Porter, meddlesome midwifery, 345
Pregnancy, menstruation during, 266
——— watery discharge from uterus during, 267
——— influence of on insanity, 269
——— curative influence of on prolapsus uteri, 270
Prichard, death from Chloroform, 281
Prolapsus uteri, curative influence of pregnancy on, 270
Psychological Medicine—by Bucknill and Tuke, review of, 413
Puerperal fever, Cazeaux on, 277
——— Smith and Barker on, notice of, 168
Purpura and its connection with splenic disease, 479

Q.

Quinium, 202

R.

Radcliff, poisoning by gases of privy sink, 377
Radius, removal of lower four-fifths of, 89
Ranula treated by lead ligature, 283
Renal calculus, inversion of body to promote passage of, 536
Review of Transactions of American Med. Assoc., vol. x., 109
——— Armstrong, Naval Hygiene, 438
——— Bennett's Clinical Lectures, 429
——— Bucknill and Tuke, Psychological Medicine, 413
——— Davy on Ganglionic Nervous System, 445
——— Geddings Lectures on Surgery, 124
——— Hooker on Rational Therapeutics, 129
——— Peacock on Malformations, &c., of Human Heart, 153
Review, Richardson on Cause of Coagulation of Blood, 139
Riboli, treatment of ulcers by caustic lint, 545
Richardson on Cause of Coagulation of Blood, review of, 139
Rogers, arsenic in subnitrate of bismuth, 99
Rottlera tinctoria for tape-worm, 214
Roussel, iodide of potassium for dispersion of milk, 561
Rupture of uterus treated by opium, 274
Ruschenberger, case of gout, 400

S.

Sabal, experiments with Bibron's antidote, 575
Salter, effects of local influences on spasmodic asthma, 523
Saoria as a remedy for tapeworm, 518
Scapula, fractures of, 105
——— removal of, 578
——— disarticulation of from shoulder-joint, 190
Scarlet fever, muriatic acid in, 567
Shedd, painless delivery, 341
——— discharge of liquor amnii during pregnancy, 342
Sickbed, 101
Simpson, inversion of the body for renal calculus, 536
——— carcinomatous growth removed by pen and escharotics, 545
——— metallic sutures and metallic ligatures, 545
Skinner, poisoning by conium maculatum, 564
Skues, Indian hemp in tetanus, 538
Skull, fracture of with protrusion of brain, 85
Sloane, rationale of saccharine treatment of diabetes, 528
Smith, action of cod-liver oil and fats, 213
——— impregnation without rupture of hymen, 290
——— veratrum viride as an arterial sedative, 577
——— inversion of uterus, cured, 270
——— unconscious delivery, 270
Smith's Manual of Obstetrics, notice of, 192
Solly, large cyst removed from neck, 189
——— talipes varus, 190
Spencer, statistics of lithotomy, 578
Spermatic cord, new structure in, 509
Spleen, rupture of, 563
Spontaneous hemorrhage, death of an infant from, 356
Squire, cerebro-spinal meningitis, 452
Sternum, congenital fissure of, 197
——— fracture of during labour, 272
Stomach, fistula of, 215
Stone in the bladder, medical treatment of, 540
Streatfeild, six cases of cataract in same family, 551
Stricture of urethra, treated by Syme's method, 72
Strohl, saoria as a remedy for tapeworm, 518
Strumous ophthalmia, 263
Struthers, size of male and female larynx, 546

Strychnia, therapeutic uses of, 517
Subclavian artery, ligature of, 229
Subnitrate of bismuth, arsenic in, 99
Sugar in diabetes, 217
Sulphur ointment, compound, 204
Sun-stroke, exhaustion from, 404
Supra-renal capsules, functions of, 222
—— bronzed skin from disease of, 223, 225
—— congenital absence of, 225
—— melanosis of, 98
Syme, fracture through trochanters of femur, 542
—— disarticulation of scapula from shoulder-joint, 190
Sympathetic nerve, influence of cervical portion of on eye, 546
—— inflammation of eyeball, 547
Syphilis, notice of Coote's report on, 503
Syrup of proto-carbonate of iron, 203
Szukits, menstruation in Austria, 552
—— how many children can a woman bear, 554

T.

Tapeworm, Rottlera tinctoria for, 214
—— saoria as a remedy for, 518
Teeth, development of, 511
Tennessee Hospital for the Insane, notice of report of, 176
Tetanus, 475
—— cured by Indian hemp, 538
Thigh, apparatus for fractured, 394
Thomas, cerebro-spinal meningitis, 451
Thompson, chloroform, 464
—— diphtheria, 522
Thorp, strumous ophthalmia, 263
Toland, veratrum viride, 576
—— persulphate of iron as an hæmostatic, 579
Trachea, piece of tin in, 290
Tracheotomy in croup, 189, 251
Trousseau, prognostical and diagnostical value of, 210
Turpentine, death from swallowing, 561
Typhoid fever without tympanites, 403
—— pneumonia in Caswell Co., N. C., 330
Typhus, abdominal, 532
—— fever, is intestinal hemorrhage diagnostic of, 209

U.

Ulcers, treatment by caustic lint, 545
Unconscious delivery, 270
Urea in healthy perspiration, 510
Urethra, stricture of treated by Symes' method, 72
Urethra, constitutional effects from substances introduced in, 290
Urethro-vesical calculus, removal of, 87
Uterus, diseases of cervix, 495
—— laudanum in painful affections of, 557
—— rupture of, 274
—— inversion of, reduced, 13, 270
Uva ursi as an obstetric agent, 557

V.

Vaccination, report of Belgian Academy on, 221
Van Buren, anæsthesia, notice of, 450
Veratrum viride as an arterial sedative, 305, 463, 465
—— medicinal properties of, 575, 577
Verneuil on cure of popliteal aneurisms by digital compression, 234
Virchow, amyloid degeneration, 225
Vomiting of pregnancy, pepsine in, 554

W.

Walker's experiments with Bibron's antidote, 567
Walton, malposition of lachrymal canaliculi, 550
Warren, trephining lower jaw for neuralgia, 574
Watson, sympathetic inflammation of eyeball, 547
White, inversion of uterus, 13
Whitley, disease of pulmonary artery, 485
Wilks, specimens of diseases of bone, 481
Willard's address, notice of, 449
Willebrand, secale cornutum in asthenopia, 550
Williams, five cases of cataract in one family, 579
Williamson on condition of the lung as a proof that the child was born alive, 280
Wood, abscess in aneurismal sac, 94
—— and Bache, Dispensatory of the U. S., notice of, 161
Woodson, poisoning by camphor, 284
—— secondary cancer of pleura, 334
Wood's Practice of Medicine, notice of, 474
Woodward, minute anatomy of cysto-carcinoma, 54

Y.

Yeager, capsicum enema in convulsions after delivery, 569
Yellow fever epidemic of 1856 at New Castle, Jamaica, 209
—— on board of the frigate Susquehanna, 324

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The Session of 1858–9 will commence on Monday, 11th of October, and continue, without intermission, until the first of March. The examination of candidates for the Degree of Doctor of Medicine will be held at the close of the Session. The Commencement for conferring Degrees will take place early in March, causing as little detention of the Graduating Class, after the close of the Lectures, as possible.

There will also be an examination of candidates for graduation, on the 1st of July; the Degree, in such cases, being conferred at the ensuing Commencement in March.

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SESSION OF 1858–'59.

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For further information, address B. HOWARD RAND, M. D., *Dean.*

HARVARD UNIVERSITY.—MEDICAL DEPARTMENT.

SESSION OF 1858-59.

The Annual Course of Medical Lectures in this Institution will commence on the first Wednesday in November, 1858, at the Massachusetts Medical College, Boston, and continue four months.

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(32)

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